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The Sphere of Exodontia in Modern Dentistry.

By Dr. George B. Winter, Exodontist, St. Louis, Mo.

When considering the profession as a whole, it must be apparent to even the casual observer that the progress made in the extraction of teeth has not been equal to that made in most of the other branches of dentistry. Whatever the individual development may have been, it has not been general among the profession. I shall consider some of the causes of this neglect and the effect it has had on the advancement of dentistry, and give some reasons why there should be a more extended and concerted effort by the general practitioner, as well as by the exodontist for an advancement in the science and art of exodontia, an effort at least equal to that made in the other branches of dentistry. With the present civilization and probably for all time, the extraction of teeth, when indicated, will play an important part in the great work of preventing disease.

Dr. Ottolengui is to be congratulated for establishing a "Department of Exodontia" in his valued publication. This is an advanced step for a good cause. Such a department should be an excellent stimulus to the profession to put forth greater efforts in producing more literature on this subject, for by literature only may the department become general, and the exchange of ideas is the greatest aid to individual effort.

New Terms Necessary.

The development of science and art, like discovery and invention, presages a corresponding growth of language. New words that will convey a proper conception of whatever has been unfolded and

brought to light must be supplied or much that is gained is subsequently lost. The development of specialties in dentistry have from time to time made of our language, a similar demand. For years there have been dentists who have limited their practice to the extraction of teeth. That this growth within the profession, one that has advanced until it is a recognized specialty, also demands adequate terms, few will question and none can deny. Without definite words by which ideas may be communicated, recourse is made to descriptions and definitions for this purpose. In this particular case, the use of such combinations of words as "extraction specialist"; "extracts teeth only" when spoken of; and, "I'm a specialist—I limit my practice to the extraction of teeth"; "I'm a specialist—I do extraction"; "I do extracting only," etc., etc., when speaking, are some of the forms of expression that have been in common use. Think of such titles for a profession or for one who practices a profession!

Exodontia Exodontist.

The building of suitable terms for this purpose, though apparently simple, has been proven to be to the reverse. Before presenting the word "exodontia" as a specific term to denote the extraction of teeth, and "exodontist" to signify one who extracts teeth, considerable time, extending over several months, was devoted to the selection of these words. The writer was not alone in this work, but was ably assisted by scholars of known ability in English, in Latin and in Greek. To take up in detail the various reasons for adopting these terms would interest but few, but I desire to say that they are the result of much thought and due deliberation, and that they were chosen with no less a motive than to offer the best to the profession. The selection is not an arbitrary one and, as to the writer, the field is open or any who care to labor therein.

Importance of Specific Terms.

The extraction of teeth is probably the oldest branch of dental surgery. Not alone is it the oldest branch, but it was the first branch to receive general attention over any great part of the civilized world. The spreading of this practice was especially rapid in the period following the invention of the "anatomical forceps," by Sir John Tomes, an English dentist, about the year 1840. So universal did this practice become, that teeth were "pulled" promiscuously by such pseudo-operators as the country doctor, the barber, and the village blacksmith. Broadly speaking, it was a form of avocation for anyone who happened to possess a pair of "tooth pullers." Such conditions, having been the common practice for years, and, existing in a less degree in some localities to the present time, afford a tangible reason for a form of corrella-

tion that is more universal than it is the wont of the profession to admit; namely, that with the laity, dentistry and "the pulling of teeth," and the dentist and the "tooth puller," are very closely related subjects and individuals. This being the situation that confronts us, the adoption of definite terms for this branch of dentistry is another stride forward in the placing of our profession in its proper light before the public. This is especially true with the subject of extraction of teeth as the early abuses practiced here have caused a more general misunderstanding of dentistry and a greater apprehension of the dentist than possibly anything else. The sooner we become *exodontists* and practice *exodontia,* whether as a specialty or in general practice, the sooner this condition will be improved.

Exodontia a Neglected Subject.

While the extraction of teeth was the first branch of dentistry to come into general practice it is probably practiced in a more haphazard manner to-day, by the profession as a whole, than any of the other branches. In other words, it has not been given just consideration, with the inevitable result, that in the main, operations are performed to-day very similarly to the manner of operating a decade ago. I might go farther and say, without any considerable detraction from the truth, that there has been little advancement in this subject in the past half century, save what has been brought about by the introduction of anesthesia. This lack of growth is not at all strange when a study of the conditions that have led to the present development of dentistry are considered. The extraction of teeth was the primary branch of the old school of dentists. Next came the platemakers who attempted to restore, by artificial dentures, the masticatory function upon which the "tooth puller" had made great inroads. This method of providing a means of mastication, being only partially successfully in some cases, and a complete failure in others, there came a just demand to save the natural organs. Neglect and the almost universal destruction of the teeth by caries left them in a condition which necessitated the eradication of pathological disturbances and the restoration of destroyed tissues, if teeth were to be conserved and lost function restored. To do this required thought that would have built empires and would have developed skill that would have produced art worthy of a place in the most select galleries of the world, had it been so directed. However great the undertaking, the profession has been equal to the task and has developed artisans who have devised forms and methods of restoration so complete, that to-day few cases are presented in which excellent results cannot be obtained and function maintained or restored by modern dental art. Having advanced thus far, attention is now turning to mouth hygiene and

prophylaxis. Present conditions place exodontia as an important adjunct to this good work and before I shall have concluded this article I will endeavor to show why exodontia should not be neglected and that when it is rightly practiced it occupies an important position in dentistry.

Failures in Exodontia.

Generally speaking, the preparedness and skill required for the removal of a tooth from its retaining tissues is greatly underestimated, and too little significance is given to the result of the operation. Of the different operations commonly undertaken by the average dentist, there are more failures in the extraction of teeth than the combined failures of all the other operations. If the diagnosis of the case indicates a crown, the tooth is crowned; if a filling or an inlay is the restoration undertaken, the filling or the inlay is inserted. A similar result prevails in all the other dental operations, with the one exception—extraction of teeth. This should not be. Exodontia is a surgical procedure and in its practice it is a branch of surgery in which operations are more frequently performed than in any other division of the surgical art and there are cogent reasons why the operation for the removal of a certain tooth from its retaining tissues should be performed with an equal degree of certainty as to the results of the undertaking as any other dental or surgical operation.

Causes of Failure.

Failure in any operative procedure is usually traceable to one of two causes, namely: the difficulty of the operation undertaken or to lack of skill of the operator. Under the latter is included all requirements necessary for the development of a skilful operator, such as a knowledge of anatomy, and pathology; and ability to diagnose local and general conditions and a thorough understanding of the operative procedure. In other words, there must be mental dexterity as a basis by which physical dexterity is rapidly acquired by practice. As operative skill is developed the cause of failure in difficult cases gradually vanishes, thus limiting the cause of failure in most cases to unpreparedness.

Exodontia Frequently Difficult.

This unpreparedness for the extraction of teeth is in no sense traceable to the inability of the profession to acquire operative skill in this branch of dentistry, but to three main causes, namely: First, the attention of dentists have been directed mainly to devising methods for restoring and improving lost function as previously mentioned. Second, the probable difficulty of the operation is frequently under-

estimated. Third, the dentist does not fully appreciate the gravity of failure in an attempted operation.

The separating and removal of a tooth from its supporting structures, under certain conditions, demands of the operator, skill and resourcefulness second to that of no other surgical operation. The very nature of the tissues to be operated upon; the many irregularities encountered, and the innumerable pathological conditions that are presented, at times produce a veritable chain of difficulties that must be overcome if the operation is to be a successful one. I venture the assertion that, in the dental profession, there is a very considerable percentage of men who have never given this matter serious thought.

Greater Skill Required.

Before the advent of modern dentistry, little skill, compared to present-day standards, was required for the extraction of teeth. A tooth was seldom removed except for pain caused by pulpitis, and in such cases the crown usually retained sufficient strength by which the roots could be extracted. Following the death of the pulp, the tooth was seldom disturbed unless pain again intervened. This was not of frequent occurrence as pathogenic bacteria were not so prevalent, and their consequent infection so common as at present. The required removal of roots for artificial restorations; the splitting and peculiar fractures due to misjudged restoration; earlier excessive decay of the first permanent molars, due to present-day food standards, are some of the causes that are contributing to a more complete destruction of the teeth. After all, whatever may be said of the cause, the fact remains that the obstacles to be overcome in the practice of exodontia are on the increase, and to-day, in most cases, the teeth removed are those that cannot be restored to health and function. In such cases, the crowns of the teeth are usually destroyed, not to mention frequent pathological and numerous abnormal conditions of both the teeth and surrounding tissues that may intervene to militate against a successful operation.

Of the cases presented, not only are the number of difficult ones increasing, but the public is demanding better service of the operator. As is well known to every dentist, the advancement in civilization, with the added comforts and luxuries of life, calls for at least an equal improvement in dental procedures. This is not an unjust demand and the dental public is certainly just as much entitled to it in exodontia as in any other branch of dentistry.

Effect of Unsuccessful Operations.

The effect of an unsuccessful operation, so far as the individual is concerned, can often be surmised by the operator losing the patient, but whether the failure has left an impression so indelible in the

memory of the unfortunate one that she never again seeks dental services, unless driven by pain to do so, is not commonly known. This being true, there is no standard of measure by which to determine the deleterious effect of such an occurrence upon the profession in general, but an assumption that every failure receive as great publicity as ten successful operations, is not at all presumptious. Without losing sight of the fact that failure in any one branch of dentistry has an almost equal effect upon all the other branches of the profession, by a little reflection, it is possible to form some conclusion as to just what failure means, not alone to dentistry, but to humanity in general. With his own interest, the interest of the profession and the good of mankind at stake, can any dentist conscientiously attempt an operation in which his skill is not commensurate with the undertaking?

Will Extractions Decrease in Number?

By the rapid progress made in dentistry in recent years it might be inferred that exodontia will sonner or later become a lost art, and that when the public becomes educated to the real province of dentistry, there will be no loss of teeth. This sort of advancement is to be hoped for and indeed it will be a dental millennium if it ever exists, but in the light of other conditions, there will probably never be such a day. The majority of diseases that effect mankind could be prevented, and with a universal education and a concerted action of the world, many of them could be entirely eliminated. Among them tuberculosis might be mentioned. To accomplish this would be of vital interest to every human being, but is it reasonable to expect it?

With exodontia and the development of a better operative ability by the profession in general, the number of extractions will greatly increase. Do not misunderstand me and form the conclusion that I advocate the removal of good teeth. No tooth that can be restored to health and function, or that can in any way be utilized in any form of restoration, should be extracted, provided the general condition of the patient will permit of this procedure or the retaining of the organ will not be deleterious to the general health of the individual.

A great majority of the people have never had the services of a dentist. Probably ninety per cent. of these have teeth that the destructive process has advanced to a degree where extraction is the only recourse. Such teeth usually afford the best possible way for the entrance of pathogenic bacteria into the system. Extracting these should be the first operative procedure. Of people who are accustomed to receive the attention of a dentist, a very considerable per cent. are wearing broken down teeth and roots that cannot be made to further subserve them, and no

doubt in most cases they would be extracted, if the patient had a higher regard for the ability of the dentist to extract them.

Exodontia by the General Dental Practitioner.

Should the general dental practitioner be a skilled exodontist? The question is best answered by another question: Is the dental laity entitled to the best service obtainable? There are dentists who specialize in exodontia, and the number is constantly increasing. I am a firm believer in the practice of exodontia as a separate specialty, but every dental practitioner should at least have a technical knowledge of the subject, even though he does little or no extracting. This is required that he may give his clientele the best service, and when patients are referred to an exodontist, that he may at least know what to expect from him and understand the character of the operation to be performed.

There are also many cases that cannot be conveniently referred to an exodontist. These must have attention. Other cases—the so-called simple ones—may occasionally be undertaken, and if so, skill as an operator, at times, is not amiss, for nothing more effectively paves the way to confidence and further professional service than a simple extraction, skilfully performed at the psychological moment. For the dentist who desires to include exodontia in his general practice, that he should be both learned and skilled in exodontia is just as essential as for him to be qualified in any other branch of dentistry.

Unfinished Dental Operations.

By unfinished dental operations I refer to those innumerable cases where all that can possibly be done to put the teeth in good condition is finished, but the work is not completed. I will illustrate this apparent anomaly. A patient applies for dental services. All the teeth that can be conserved are put in condition, but there is one that cannot be restored so as to give further service. It does not ache, so it is saved (?)—left in the mouth. Why are such teeth allowed to remain? There can be but two possible reasons. The usual one is that the dentist is not sure of his ability to perform a successful operation, in which case he avoids the extraction for fear of failure and the loss of the patient; so the advice commonly given is that it is not necessary to disturb the tooth unless it aches, in which case it can be extracted. Or again, the patient has not enough confidence in the dentist to have the tooth extracted. With ability of the operator as an exodontist recognized the tooth would be extracted in the first case recited, and this very same ability would inspire the patient with confidence in the success of an operation, and the tooth would likely be removed in the second instance. In either case, an otherwise neglected mouth would be put in a healthy

condition by the removal of a foreign body that is detrimental to the health of the patient.

Exodontia and Prophylaxis.

The attention of dentists everywhere is directed to mouth hygiene. Salivary deposits and other concretions are carefully removed. The surfaces of the teeth are polished. Disinfectants and various preparations for the toilet of the mouth are prescribed. This is a good work—none greater, but why is that broken down tooth here, or that partially submerged root there; those perpetual founts of pus pollution permitted to remain in that otherwise prophylactic mouth? Again I say, that no tooth that cannot be restored to health and function should be allowed to remain in the mouth. It should be removed by the operator or by an exodontist, and in either case skill, in keeping with the other dental operations, is indicated. If mouth hygiene is to reap its greatest reward exodontia will play an important rôle in the great modern movement for the prevention of disease by mouth sanitation.

Extracting and Root Extractors.

FREDERICK W. FRAHM, Ph.G., D.D.S.

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In almost every dental practice there is more or less extracting to be done, whether the practitioner really desires it or not. This is especially true in the smaller cities and towns, where no one specializes in this particular field.

The extracting surgeon may be ever so proficient in his technic if he has not the necessary and proper instruments at hand with which to do the work he is at a great disadvantage, causing a great deal of inconvenience to himself and annoyance to his patient. This is especially true at this time, when we are called upon to do the extracting while the patient is under the influence of an anesthetic, such as nitrous oxide or somnoform.

I have found this to be true, while I was conducting a practice that demanded a great deal of extracting to be done, and while assisting the chair of anesthesia in the Colorado College of Dental Surgery, of Denver, Colo., I was called upon to do the extracting as well as administering the anesthetic. Though I was well equipped with all the best patterns of forceps and root extractors that the market afforded, I was still lacking in root extractors. For during the period of anesthesia afforded by som-

noform it is desirable to avoid any delay that would lessen the amount of work that could be done. This is also desirable during anesthesia by any of the other agents that are in common use at this time. We should strive as much as we can to avoid producing shock, or lengthening the period of shock, while still doing all the work possible at that sitting. This can be aided a great deal by using such instruments as will necessitate the least number of changes, so that you can keep your eyes on the field of operation. This is doubly true when extracting roots, or badly broken down teeth whose crowns are not strong enough to admit of the use of forceps. Difficulty is added to this work when we are extracting from

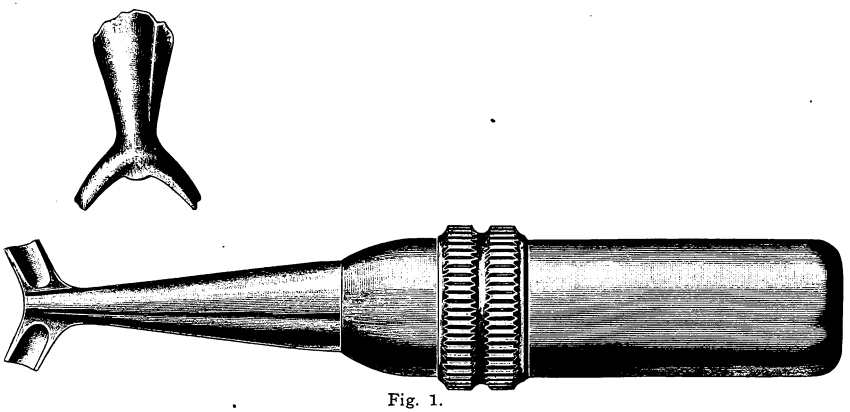


Fig. 1.

the mandible, for here we have the tongue, saliva and hemorrhage to contend with, the latter being especially troublesome in the majority of the cases under anesthesia.

When I was extracting roots on both sides at the same sitting under an anesthetic and had to exchange extractors once for each side, thus necessitating the loss of a fraction of time, a thing to be avoided where it is possible, since every moment means that many more roots extracted, many times I have wished for a right and left extractor on the same end of a handle, so arranged as to make it effective and not have any objectionable features. An instrument that could be used right and left, for anterior and posterior positions, also for action on the mesial and distal surfaces of the roots.

The Author's Root Extractor.

These features and others are embodied in an extractor shown in Fig. 1. It has been used by many, all of whom speak highly of its efficiency and convenience.

The extractor measures 5½ inches over all; the handle is 3½ inches

long and 1 inch in diameter. It is hollow and has a double knurl placed upon it 2¼ inches from the end, for the purpose of making an ideal grip for the strongest part of the hand, namely, the 1st and 2nd fingers.

The beaks and shank of the instrument are made of steel; it is screwed and keyed into the handle so that it cannot be loosened, no matter from which direction the force is applied. The real beauty of the instrument is the two beaks. They are set at an angle of 90 degrees to each other and at an angle of 65 degrees to the long axis of the shank. They are not very heavy; have a sharp edge, so that they may be very easily forced between the process and the root. This is facilitated by the beaks being concave on the inner surface. The end of each beak is also concave to aid it in grasping the root without the danger of having the instrument slip to the one side or the other.

The one great objection to a right and left instrument of this kind has been eliminated by having the beaks set at an angle of 45 degrees to each other. Thus when the one beak is in action and being rotated, the other beak will be out of the way and not obstruct the view of the field of operation.

I feel certain that such an instrument as this will fill a long-felt need, for with it extractions can be made from any and all positions with only the one instrument.



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Extending the Scope of Orthodontia.

By R. C. WILLETT, D.M.D., Peoria, Ill.

Read before the American Society of Orthodontists at Chicago, July, 1913.

Problems are ever confronting us, no matter where we may find ourselves on life's road, whether as individuals or as a society banded together to promote matters of mutual interest.

Since attending the meetings of the American Society of Orthodontists and my admission to membership, I find that there are other men here like myself who are confronting the problem of establishing an orthodontic practice in a city of less than one hundred thousand population.

In presenting this subject for discussion it is with a view to getting an expression of opinion from the older and more experienced orthodontists relative to extending the field of practice.

I entered the exclusive practice of orthodontia in a nearby larger city after ten years of general practice of dentistry in a city of ten thousand population, and it was there that I came to realize the true situation that confronts the conscientious dentist when obliged to consider orthodontic treatment for a child patient coming under his care.

Before I took up the study of orthodontia with a view to entering the exclusive practice elsewhere, my only idea was to eliminate the neglect and in a way give a more complete service to the younger patients where, for reason of age, it was not practical to send them away from home where they could be under the care of the specialist. It was through my preparation to do the orthodontic work required in my own

general practice of dentistry that I became convinced of the opportunities existing to establish an exclusive practice outside of the larger cities. I will relate a little of my experience in attempting to establish such a practice and to extend the work in a new field. The one I choose I do not believe to be any different from any other section of our country under normal conditions.

Establishing a Practice in a Small City.

I sent out the usual formal notices to the dentists of my adopted city and also to those dentists in the neighboring counties.

The matter of getting the people to concede to my demands in payment of a sufficient fee to enable me to properly carry on the work, or to convince them of its importance, has not been my greatest problem by any means. It has been the weeding out of false ideas in the minds of the dentists, as well as the laymen, which are contrary to all modern orthodontic principles.

Soon after sending out the announcement that I had discontinued general practice, and would in the future limit my practice to orthodontia, I was receiving models of cases of every description. In almost every instance they were those of patients far removed in years from the age we find it most practical to treat. The ages ranged from fifteen to thirty. Many of them were cases where a well-meaning and conscientious dentist had advised waiting, or where the case had been mutilated through extracting teeth. The idea of beginning treatment at an early age seemed to have been the furthest from the minds of the dentists.

Frequently these out-of-town patients were referred and came themselves with great hopes and expectations of receiving a much-needed service, but for which they were coming too late in life. These same conditions confront the orthodontist more or less in all parts of the country, I do not doubt, but the fact that such ignorance relative to orthodontia does exist would make it seem that in limiting orthodontia to exclusive practice the great benefit in our work has been at the same time limited to a selected few, and untold thousands are neglected.

The patients were coming from representative dentists of the smaller towns, dentists I well knew to be far above the average in other lines of general practice. Many of these dentists had given me great encouragement to enter orthodontic practice, and it was evident to me that if they were interested enough in orthodontia to refer permanent dental cripples who were ready and willing to pay well for any service that might benefit them, some effort should be made to direct their attion to the child patient of an age where we are in a way able to assure results.

It is possible that my sympathy is more with the smaller city and

village dentist than some, having practiced myself so long in like localities. For that reason I cannot believe, as one well-known orthodonist and teacher has often said, in speaking of dentists of the smaller city, that it is a problem for the dentist to work out for himself, and not one for the orthodontist to have very much to say about, and at the same time this man expresses anxiety for fear that the dental profession will do more to retard than promote the progress of orthodontia.

Being located one hundred and fifty miles from any other orthodontist in exclusive practice, I felt that I would not be overstepping the rights of a fellow practitioner if I undertook a scheme of my own to change the character of cases that were being directed to me. At the same time I hoped to instil something in the minds of neighboring dentists to counteract the early teaching relative to the work. I selected the names of one hundred and fifty dentists from the neighboring towns, to whom I had sent announcements when I entered exclusive practice, and mailed to them a letter, in which I spoke of the most desirable age at which the orthodontist of to-day desired to receive patients for treatment. I also suggested a plan of co-operative treatment through which we might overcome the inconvenience to the younger patients, where distance was a serious obstacle to my taking the individual care of the case.

The result of this letter was not altogether spontaneous, but is slowly showing its effect. During the six months following the sending out of that letter I was invited to take part in seven different meetings of neighboring district societies. As a subject for essays before these smaller societies, where the attendance was from twenty to thirty-five members, I avoided anything of a technical nature. The following is a partial list of subjects selected:

Orthodontia Papers before General Practitioners.

1. "That Phase of Orthodontia Not a Specialty." In this paper, the importance of making an early diagnosis and the dentist's duty in seeking the casual factors that might result in later anomalies of development was discussed.
2. "The Relation of Orthodontia to General Practice."
3. "An Important Relation, Dentistry, Orthodontia and Rhinology." This paper was given more as a symposium between a rhinologist and myself.

My attempt was only to give them something of the fundamental principles upon which the orthodontist of to-day is working. The importance of observing the early development of irregularities, diagnosis of the various types of irregularities, and their etiology.

At these smaller meetings the essayist can get closer to the dentist and get the attention of many men who would skip all papers pertaining to orthodontia at a State Dental Society meeting, and who would never get into an open discussion following the reading of a paper. Here they enter into the discussion and ask questions. There are no side attractions nor extensive programs from which they may select such subjects as may interest them.

I realize that the subject matter presented at these meetings had been gone over many times before and many times better written by gentlemen present than I could ever do it, but how few dentists have grasped the idea as set forth in the published article, even if it has been read? Here I was able to tell it so that I could be understood and keep away from the technical features of our work, besides answering questions as they came up in the discussion.

I wish to say that the result of these meetings which I was invited to address has to a great measure changed the character of cases I am now receiving from out of town.

The notion that only a few of the cultured people of wealth in the cities will avail themselves of the services of an orthodontist is a mistaken idea. Our field is just as broad as that of higher education. They go hand in hand. Our service adds to the personality, the health and happiness of the individual we serve, and without that what will the child's future be?

Discussion on the Paper of Dr. Wilett.

Dr. C. L. Grisamore, Chicago.

I wish to compliment the essayist on his paper, and I want to say that he has been one of the few men who has had the courage to go into a country town or small city and limit his practice to orthodontia, and I think in so doing he has proved to this section of the country, at least, that orthodontia can be practiced in other places besides large cities like Chicago, New York, St. Louis, etc.

He made one point in his paper that I would like to emphasize, and that is with regard to appearing before general practitioners with papers on orthodontia. It is true, that as soon as you announce the title of a paper on some topic in connection with orthodontia, three-fourths of the audience will immediately leave the room; that is an audience of general dental practitioners. That has been brought about largely, I feel, by men who have read papers and have tried to report the most difficult cases they have had. They have tried to show the wonderful things they could do, instead of trying to show the general practitioner the

more simple things that they can do, and I think, possibly, we are at fault largely for the way the general practitioner feels regarding papers on orthodontia. If we were to take up the simple points, as Dr. Willett has suggested, and dwell on them, instead of talking about our difficult cases, these dentists would receive our papers with better grace and would be glad to hear papers from orthodontists.

Dr. Grafton Monroe, Springfield, Illinoi.

I want to say that I am a confrère of Dr. Willett, and have been working along the line of exclusive practice in orthodontia, but have not gotten to the point where the doctor has as yet.

Along the line of getting people interested in young patients, it seems to me that this is a very important phase of the subject under consideration. Those who are engaged in the regular practice of dentistry are very apt to advise delay in sending young patients to an orthodontist. I have repeatedly had folks come to me with children, with the report that their dentist had said "let the child alone; there is time enough to commence when the child has all the permanent teeth in the mouth." We all know how erroneous that is. In my feeble efforts I have been dropping a word at dental meetings, pointing out the importance of early correction, and I find dentists are beginning to comprehend, and a number of patients are being brought in now at a much earlier age, whereas formerly the older ones were the only ones we had.

This paper is worthy of our commendation, and I think Dr. Willett is working in a field where he will help all smaller towns and help those who want to go into the work in smaller towns.



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"Surgery of the Jaws."

By Henry Sage Dunning, M.D., D.D.S.

Visiting Oral Surgeon, New York Hospital; Attending Dental Surgeon, Vanderbilt Clinic, College of Physicians and Surgeons; Director of Oral Surgery Department, New York College of Dentistry; Clinical Assistant, Manhattan Nose, Throat and Eye Hospital.

Read before the Second District Dental Society, October, 1913.

I shall not try to cover all the surgical conditions of the jaws this evening, for that would take too long, and, I am afraid, would involve us in too many deep problems that cannot be answered in one sitting.

My aim to-night is to point out to you the importance of oral surgery, to give a sort of outline of the work included in this field. The oral surgeon is "the missing link" between the dentist and the surgeon. I believe I have charge of the largest purely oral surgery clinic in this country, at the New York College of Dentistry. The clinic, under the direction of Prof. Faneuil D. Weisse and myself, has been for a number of years a sort of "clearing house" for all kinds of jaw cases from nearly all the hospitals of Manhattan, and some from Brooklyn. In the last seven or eight years we have treated over 1,100 cases of fracture of the jaws. Up to within the past few years diseases of the mouth and jaws have received very little attention at the hospitals. Very few of our institutions have had competent dental surgeons on their staffs, and the poor of our great city have had rather meager treatment for diseases of the buccal cavity.

Cases Treated in the Clinic.

Up to a few years ago, when a jaw case presented at one of the hospitals, the house surgeon would ship him, like a case of measles, or some other unpleasant disease, to old Bellevue. Here the patient would reside for a week or so, and then be shipped again, with a Barton bandage on his head and a bottle of mouthwash in his pocket, to the dental school.



Fig. 1.



Fig. 2.

We are receiving daily, from the hospitals and from physicians and dentists, cases of fracture of the maxillary bones, alveolar abscesses, advanced cases of pyorrhea alveolaris, necrosis of the jaws, impacted and abscessed third molars, dentigerous cysts, ranula, lymphadenitis, osteomylitis, syphilitic lesions of the mouth, maxillary sinusitis, temporo-maxillary dislocations and ankylosis, different forms of stomatitis and glossitis, epulis, fibroma, sarcoma, epithelioma, and osteoma, etc. Neuralgia of the fifth cranial nerve, cleft palate, harelip, etc.

Most of these cases require special treatment, and come under the head of oral surgery, a specialty of medicine which is as important as that of rhinology, otology or opthalmalogy, but which has received little recognition. The day has passed when ruthless extraction of the teeth, under septic conditions, is practiced, and mouth infections, and other diseases of the buccal cavity, are ignored. The extraction of a tooth, or the treatment of an abscess of the jaw, is as much a surgical operation

as the amputation of a finger, and should be performed under careful surgical technic.

Importance of Oral Surgery.

I am anxious to see the practice of oral surgery placed on a more scientific basis. The surgery of the mouth is important work. The mechanism of the jaws is complicated, and, like other complicated machines, gets out of order easily, when subjected to injury. The func-

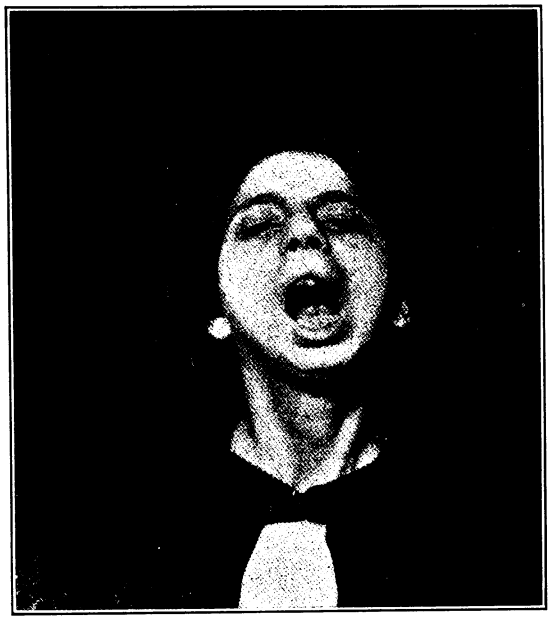


Fig. 3.



Fig. 4.

tions of the jaws, teeth, gums, tongue, salivary glands, lymphatics, etc., are of the utmost importance to the entire system, and their importance is being recognized more and more by the physician, by the surgeon, by the dentist and by the patient himself.

I believe that diseases of the mouth, and surgical conditions of the jaws, have been greatly neglected and overlooked by the medical profession and the dentist. Two incidents of last week go to prove this contention.

Example of Bad Surgery.

One example of the disregard for the mouth was plainly brought to view by a surgeon of prominence, whom I was assisting in refracturing a jaw. It was a case of an old neglected fracture of the lower jaw, of about five months' duration. The fracture was between

the second bicuspid and molar, firmly united, but in a faulty position, and only the molars of the upper and lower jaw articulated. The jaw had to be refractured to obtain normal occlusion and to restore the function of the teeth. The surgeon, in his haste, used a large bone-cutting forcep, such as a tinsmith might use, to bite through the bone. He exerted tremendous force on the instrument, there was a loud snapping



Fig. 5.



Fig. 6.

noise, two teeth were knocked out, and the bone so badly splintered that union of the parts would not have taken place for about a year, had the patient survived. He died shortly after leaving the operating room from hemorrhage. Notwithstanding the fact that the operator was a good general surgeon, he performed a careless operation, and one that showed a lack of knowledge and a disregard for the tissues he was working upon. He laughingly said, as he knocked out two perfectly good teeth during the operation, "There will be a job for a dentist when we get through." If he had been operating on the nose, or some other part of the body, he would have taken the utmost care to preserve all the tissue he could, but any sort of treatment seemed to be good enough for the mouth.

There should not be any force used in refracturing a jaw. The soft parts should be carefully dissected away from the bone at the point of fracture, and then the united ends of bone should be separated by means of a thin saw.

Another example of poor surgery of the jaws came to my notice recently, when a young patient presented at my office with a large sloughing epulis. I noticed a very foul odor when she came in, and before looking at her mouth, I asked her what was the matter. She said, "Oh, that is a tumor in my mouth. My doctor tied a string around it over three weeks ago, and told me it would slough off, but it has not done so yet." I was speechless with surprise for a moment, to think that in these days



Fig. 7.

of antiseptic surgery, that in these days of mouth hygiene, a foul, infected, decaying mass should be allowed to remain in a mouth, with a string tied around it, until it fell off or "walked away" of its own accord. This patient would be sure of a recurrence even if the epulis had sloughed off, and think of the amount of toxic substances that this patient had been needlessly absorbing during the previous month from this broken down tumor, when her condition might have been relieved in a few minutes with a knife and a Rongeur forcep.

I am constantly seeing cases of abscess of the teeth, often leading to necrosis of the jaws, that are not recognized, fractures that are not treated properly, maxillary sinus infections that are not cured, and many other surgical conditions of the mouth and jaws that are overlooked. It seems to me that the time has come when the diseases of the mouth, and the surgery of the jaws, should form a large part of the student's

education in the medical and in the dental school, and that the medical practitioner and the dental surgeon should work more closely together to improve oral conditions, and to better understand the treatment of disease in this region.

The lantern slides that will be shown upon the screen are from photographs and radiographs of actual cases that I have treated at the various hospitals and clinics of New York, and in my private practice.



Fig. 8.

Some of the conditions of the jaws were congenital, many were the result of trauma or injury, and other conditions were due to disease, following either neglect of the mouth or faulty treatment.

Cases from Practice.

The first slide (Fig. 1) shows a young girl, fifteen years old, who was suffering from a true bony anklylosis following a fracture of the neck of the condyle of the inferior maxilla, the result of a fall while a child. Fig. 2 is the profile of girl, showing marked displacement backward of entire mandible. History: Patient fell out of a tree when she was nine years old, and was told that she landed on the point of her chin. She was picked up unconscious and was in the hospital for several weeks. At the time of fall her mother says she had considerable bleeding from her ears which probably indicated a slight fracture at the base of her skull, probably due to the forcing of the condyle of the jaw into the glenoid cavity, and rupturing some small blood vessels in the region of the external auditory meatus. The hemorrhage stopped shortly and no other symptoms developed except that her face and jaw were painful. She was discharged from the hospital, and the doctor said she

needed no further treatment. Shortly after this she found that the motion of her jaw became somewhat limited, and after a time, about two months, she could not open her mouth more than about one-quarter of an inch, as shown in Fig. 1. Her lower jaw became more rigid as years went by and she became accustomed to living on soft, semi-solid food, as she could not masticate with any success. Fig. 2 shows profile



Fig. 9.

and position of lower jaw as it was forced backward by the fall six years before, when the condyle of jaw was fractured. A radiograph was taken and it showed that there was a mass of new bone around the condyle and joint, on the left side. She was admitted in New York Hospital, and Dr. Hitzrot and myself made an incision over the zygomatic arch and exposed the temporo-maxillary articulation. We found that there was a tremendous growth of new bone that seemed to glue the condyle to the glenoid cavity. There was also a large amount of new bone in the sigmoid notch, in front of the condyle, and it looked as though the condyle had been displaced into the sigmoid notch and a callous had formed and new bone had cemented the displaced condyle in this position. A chisel was passed between the glenoid cavity and the mass of bone surrounding the condyle, and then a gigli saw was introduced and the entire condyle and also part of the coronoid process was removed. A space of about a half an inch was made between the ramus and the



Fig. 10.

glenoid cavity and a new joint was constructed. The wound was closed up and the patient left the hospital in a few days. Fig. 3 shows final result. Patient now has perfect movement of lower jaw.

Fig. 4 shows an interesting lower third molar which has partly erupted, and one which I endeavored to remove without the aid of a radiograph. Luckily for the operator, the patient was in a hospital, for quite an extensive bone cutting operation was necessary before the tooth could be removed. The tooth looked very innocent and I thought, of course, I could remove it under novocain in a few minutes. After cutting for about half an hour without being able to remove the tooth I decided that it must have unusual roots, and obtained a radiograph which showed two curved roots that hooked upward and posteriorly in the ramus. With the help of the radiograph, under ether, at a subsequent operation, I removed the tooth after freeing root by means of surgical bur and chisel.

Fig. 5 shows a young girl of eight years with a small epulis of upper jaw. The growth had been present for about six months when the photograph was taken. It was quite hard, smooth, very vascular, and was attached to the periosteum of the alveolus of central incisor region. It was removed by the author in the hospital, and the cause of this growth was found to be due to irritation from a central incisor bent

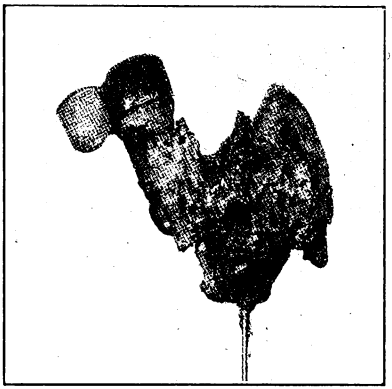


Fig. 11.

upon itself at right angles, the morsal or cutting edge projecting into the gum tissue. It was a simple fibroma. It was thoroughly excised. Fig. 6 shows the deformed central incisor.

Fig. 7 shows a malignant round cell sarcoma of upper jaw in a young man of eighteen. This growth was about eight months old when the photograph was taken. It had originated from a small epulis surrounding a first molar. It grew rapidly from the start, quickly loosened all the teeth up to the first bicuspid, and they fell out about the sixth month. The growth was extremely vascular and bled very easily. It became broken down and ulcerated very early, and presented a foul-smelling, sloughing mass. It was treated by the X-rays, radium, and other agents, but was not improved. It was thought to be inoperable, but was removed by Dr. Wm. Downes, at the General Memorial Hospital. The patient was in pretty fair condition, although he had lost about fifteen to twenty pounds. Dr. Downes split the lip at the medium line, carrying his incision up around the side of nose, up under the eye to the outer canthus. By this incision the entire face was laid open. A thin saw was then passed through hard palate into nose, separating the median suture, the soft tissues covering the external surface of the body of the superior maxillary bone were reflected and a thin saw was passed



Fig. 12.

from the orbital cavity, through the spheno-maxillary fissure, and the articulation of the malar bone with the superior maxillary bone was separated. By grasping the body of the superior maxillary bone with a pair of large bone forceps, the entire superior maxillary bone was broken away, carrying with it, of course, the floor of the orbit, maxillary sinus, palate, floor of nose and external wall of nasal cavity. Hemorrhage was severe, but quickly stopped and the patient was seen by the author four months after operation and at this time the wound looked very clean indeed, and there had been no recurrence. Patient received post-operative treatment with radium and X-rays and I believe the final result has been good.

Fig. 8 shows a case of dentigerous cyst that I operated upon at Albany last spring.

Patient, young Swede, seventeen years old, came to clinic complaining of swollen face, upper right side and slight pain. Patient said that



Fig. 13.

his face had been swollen and painful for about eight to ten months. Sometimes swelling of the face would increase and become hard and then would get smaller or go down, and patient thinks that he would at this time notice a discharge in mouth.

Exam. face: swelling of face marked, extending from infra-orbital region to alveolar process, and from ala of nose to zygomatic arch; the entire anterior wall of antrum was ballooned anteriorly about one-half to three-quarters of an inch. Boney wall of antrum greatly thinned out and a distinct egg-shell crackle noted. Somewhat tender, above area somewhat red and slightly warmer than other side.

Mouth: central, lateral, first bicuspid, second bicuspid, first and second molar in position, and in good condition. Third molar erupting, canine missing, and space of one-quarter of an inch between lateral and first bicuspid. Marked swelling over alveolar ridge, extending from canine fossa to second molar region. This swelling was oval in shape

and was about the size of a pigeon egg. External plate was thin and egg-shell crackle noted as on face. Small sinus noticed just over lateral, and probe could be passed along neck of this tooth into its alveolus, up into large cavity for distance of about one inch. Radiograph showed non-erupted permanent cuspid just over lateral root and above this there was shown another tooth which looked like a supernumerary tooth. Large



Fig. 14.

cavity shown by radiograph to involve antrum, but unable to tell by film to what extent. Roots of the two bicuspids somewhat absorbed and extending into cyst cavity.

Diagnosis: a true dentigerous cyst containing two teeth. Nose, exam. negative. Ear, exam. negative.

Operation: performed before the members of the New York State Dental Society, Albany, N. Y. Patient given one-sixth gr. morphine by hyperdermic to quiet him, and to relieve from post-operative pain. Cyst area painted with one-half strength tincture iodine. One per cent. novocain injected into swelling of alveolar border, deeply into periosteum and bone. An incision then made along swelling, extending from lateral to second molar. Soft tissue laid back and bone exposed. Anterior wall of antrum found to be very thin; with chisel and mallet broke through thin internal alveolar plate and found large cavity full of thick yellow pus, containing white flakes. Enlarged opening quickly, and entire wall

of antrum found to be thin, soft and necrotic in places. With Rongeur forceps removed large area of diseased anterior wall and made opening into antrum that would allow passage of ends of four fingers of hand. Excavated about one and one-half ounces of thick pus, irrigated cavity with warm saline solution, and for first time obtained good view of cavity. Cavity extended from floor of orbit to alveolar ridge, from



Fig. 15.

second molar tooth to lateral, and upward to floor of nose. Cavity lined with smooth, thin membrane or sac, which was partly removed by operator. Cavity cureted and two teeth, a temporary cuspid and permanent cuspid dislodged from bony wall. Rough edges of thin bone surrounding opening into cavity smoothed off, and cavity packed with bismuth paste and gauze. This cyst cavity was found not to connect directly with nose. The membrane lining bony cavity seemed to wall off nose at middle meatus, the natural communication of nose and antrum. A puncture through nose into cavity was made to establish better drainage.

Treatment: cavity has been packed with bismuth gauze and irrigated with warm saline solution about three times a week for last three months. Opening has closed in greatly, but cyst cavity about same size. Tissues are clean and healthy. Prognosis: opening in cyst cavity and antrum will continue to fill in, but will never completely close. No

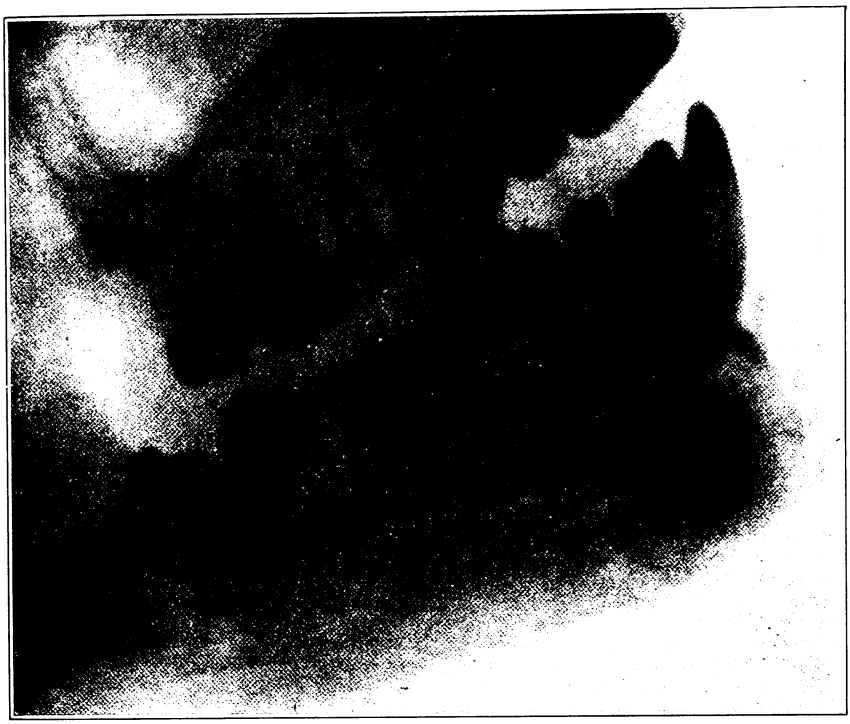


Fig. 16.

danger of recurrence, as lining membrane of cyst has been removed and cause of irritation, the teeth has been done away with.

Fig. 9 shows epithelioma of face which was extremely malignant. Woman fifty-five years old had little "pimple," she said, on face about eight months before this picture was taken. She picked it and then a sloughing sore developed that refused to heal. She went to a hospital where she was treated with radium and X-rays, and says she was burned there and the sore became worse. I do not believe she received a burn at the hospital as it was one of the largest and finest hospitals in New York City. This treatment did not, however, benefit her, in fact, nothing that we could do for the poor woman did help her condition. She became discouraged, as well she might be, and did not return, but I believe, died a few months after I saw her, that is within one year after the first appearance of growth.

Fig. 10 shows a true dentigerous cyst in a child's jaw of six years of age. The swelling was about the size of a small hen's egg, extending from the second molar region to the cuspid. The permanent second

molar has not yet erupted, the first molar is in place, the second temporary molar is in place, the first temporary molar and also cuspid. The permanent cuspid; first bicuspid and second bicuspid are erupting in normal position under the temporary teeth. All of these teeth were in a cyst cavity, lined by quite a thick membrane filled with a straw-colored fluid. The first and second temporary molars were removed and the



Fig. 17.

first permanent molar. The cyst cavity was thoroughly opened and the sac removed with a pair of thumb forceps. The bony walls were carefully curetted and packed with gauze incorporated with bismuth paste. The cavity was irrigated and packed every other day, and in about six weeks or two months it had almost entirely filled in with granulating tissue.

Fig. 11 shows large piece of necrotic bone due to abscess of a crowned tooth. The tooth was improperly treated and then capped. It remained quiet for some months when finally it became somewhat tender and slightly loosened. The patient did not have it treated and about three weeks later abscess formed which was lanced. Suppurating sinus formed and persisted for about six or eight months after abscess had

become chronic. Patient presented at clinic with tooth attached to the large piece of necrotic bone that was held in by soft tissue only. The tissues were incised and sequestrum easily removed. Cavity irrigated with weak iodine and glycerine daily, and packed with bismuth paste gauze. Gradually filled in in about three months.

Fig. 12 shows radiograph of gun-shot case. Patient, young Italian, thirty-five years old, shot in the first molar region, lower jaw. The

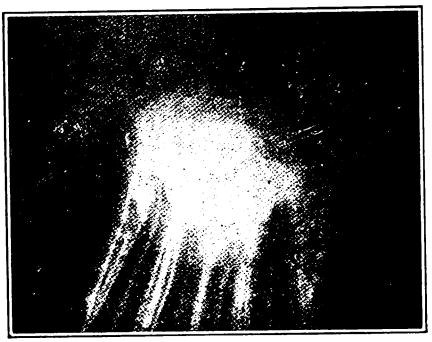


Fig. 18.

bullet split up into several pieces after it had badly splintered and fractured the jaw. The wound was infected and did not cicatrize rapidly. Several sinuses formed later, pus discharged, and spiculæ of bone urse removed off and on for a long time. We wired patient's lower jaw to upper by means of Angle's wires attached to the teeth and obtained a good union and a good result after all the pieces of necrotic bone had been removed, and sinuses had gradually closed in. This took about two months.

Fig. 13 shows a rather rare surgical condition; a pathological or spontaneous fracture of the lower jaw. Patient, man of about forty-five years old. He had a wretched, foul, neglected mouth. He gave a history of having had many abscessed teeth on the lower jaw, right side, and told us that he thought he had lost quite a lot of jaw bone from time to time, due to abscessed condition. He had several large suppurating sinuses in mouth and upon probing these, necrotic bone could be felt. He had had these sinuses and abscesses treated off and on for months at different clinics, and they had not troubled him much up to about two days before he came to us, when he bit on a hard crust of bread. He said that he felt a sort of snapping and slight pain, and then could not use his jaw again. The bone had been so greatly weakened by infection and necrosis that there was not more than one-sixteenth of

an inch of healthy bone remaining at the point of fracture. We were going to splint this patient's lower jaw to the upper by means of Angle's wires, but he did not return for treatment. He was very alcoholic, and "liquid food" in form of whiskey seemed to agree with him better than solid food.

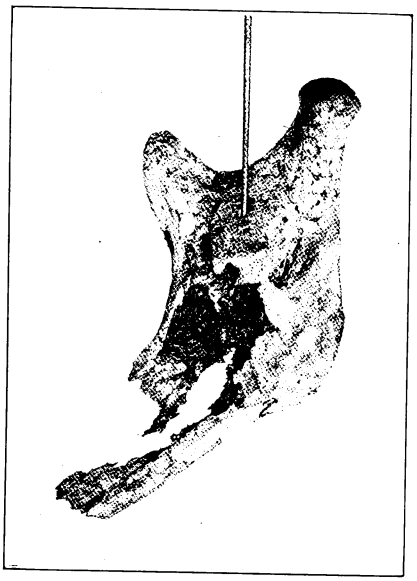


Fig. 19.

Fig. 14 shows an extensive round cell sarcoma which started as an epulis in a boy about eight years old. When I first saw this boy he had a small epulis about the size of a hazel nut, which seemed attached to the first molar, lower jaw. I removed tooth and growth quite thoroughly, I thought. The boy did not return to the clinic for about three months, and then presented with a growth that seemed to involve the entire half of the jaw and face. The child was admitted at once to the hospital, where the author was at that time house surgeon. Pathological report showed growth to be small round cell sarcoma. It involved the lower jaw, part of upper jaw, and zygomatic arch. It was decided that it would be impossible to help the little fellow by an operation, and so we treated him with Coley's toxin for about two months. The growth soon became broken down and sloughing under the injections of Coley's serum, but did not improve in any degree and the poor little chap died a horrible death after about four months of suffering.

Fig. 15 shows an impacted first bicuspid in man's jaw, age thirty-five years. This was really a true dentigerous cyst with a sac which was filled with fluid and pus. It was an infected cyst, as there was a sinus leading from the cavity through the bone to the gum and into the mouth. The cyst was open, the tooth and sac removed, the cavity curetted,



Fig. 20.

irrigated, packed with bismuth gauze and allowed to fill in with granulations.

Fig. 16 shows an extensive area of necrosis involving the entire body of one-half of mandible of a young boy seventeen years old. The patient was a fine, husky-looking lad, and the history showed that he had a pain in the first molar of this side of jaw. His dentist filled tooth and then face began to swell. He took filling out and treated tooth, but could not abort abscess, which finally pointed and opened through alveolus in region of molar. His face still remained swollen, and dentist then treated second molar which soon developed an abscess. Swelling of face increased and patient became very sick, high fever, chills, etc. He went to bed and physician was called in who opened abscess on outside of face along lower border of jaw. Abscesses would subside for a while and then new ones would develop and they would have to be opened. This continued for about two months before I saw patient. When he presented at my office he had four or five sinuses leading to dead bone

inside of the mouth, two sinuses outside of face and several large scars where the doctor had opened abscesses as they developed from time to time. The radiograph shows the entire one-half of the mandible honeycombed, by pus cavities and necrotic bone. The boy is being treated by his own physician in Jersey, and I have not received word lately as to his condition. He will probably lose all the teeth on the affected side from time to time.



Fig. 21.

Fig. 17 shows radiograph of a true odontoma in a child of seven years. There were no teeth erupted upon the side of the mandible where the growth was situated. History showed that the child has never had any temporary molars on this side, but had had a swelling in molar region for about three years. This tumor did not pain him or trouble him in any way. Radiograph showed that there was a permanent cuspid, permanent first and second bicuspid developing normally and would probably erupt on schedule time. In the molar region the first molar nearly developed, but was fused to a large tumor mass as dense as the tooth itself. This tumor was covered over by a very thin growth of bone covered by periosteum and gum. An incision was made over growth and the entire hard tumor was shelled out. It was hard, being covered by enamel on the outside. It was cut into sections by a pathologist with great difficulty, and was found to be made up of enamel, dentine, and cementum. The first molar was fused to it. The tumor

contained the elements that were to be used in the development of the second and third molars, but for some reason their development was diverted into this wild, shapeless mass. The cavity was curetted, packed with bismuth gauze and allowed to granulate, which it did very quickly. This, of course, was a benign odontoma.

Fig. 18 shows a rather extensive alveolar abscess, lower jaw, incisor region, resulting from one of the incisor teeth becoming devitalized. Patient, a young man about eighteen years old, came to me with sinus



Fig. 22.

of chin, discharging pus. History: about six or eight months previously he had a slight toothache, left central incisor, which lasted a few days and then chin began to swell and abscess formed. He went to a physician, who incised his chin outside and obtained about a drachm of pus. Abscess then subsided and wound cicatrized rapidly, only to form again in about three months. Patient went to physician again, who told him the jaw bone was affected and that it ought to be scraped. The doctor opened up his chin pretty thoroughly, judging from the old scar, and curetted. No radiograph had been taken, the teeth had not been investigated at all, and, of course, the operation was a failure. This poor boy was cut five times on the outside of his chin, and the sinus was still

discharging merrily when I saw him. Radiograph showed that the four incisors were "dead teeth" and that their apices extended into an abscess cavity. The teeth had never been filled and, of course, the roots had never been treated. What caused the dead teeth and abscess I don't know, except that perhaps the vitality of the teeth was lowered, and they gradually died after a severe blow the patient had received about one year before his trouble commenced. This treatment comprised having all four root canals carefully treated and filled and then the thorough amputation of all four roots up to their diseased bony attach-



Fig. 23.

ment, the curetage of the sinus and abscess cavity in the bone. Daily irrigation and packing of cavity followed, and sinus and cavity cicatrized completely in the course of a few weeks.

Fig. 19 shows an entire ramus of child's jaw, age six years, that I removed after a long infection from an alveolar abscess of first permanent molar. History: child was poorly nourished, little Italian, very much under size and sickly, came to clinic with acute abscess of six-year molar, lower left side. Tooth had been decayed for months, but had pained child only a few days. Tooth was very loose and painful to percussion. Entire left side of face swollen, the swelling extending from mental foramen to angle of jaw and pointing somewhat downward into submaxillary region. The mouth was in a filthy condition, all the teeth in different stages of caries, the tongue coated. There was a large swelling along the alveolar border from region of first bicuspid to second molar. There was marked fluctuation upon palpation of this swelling. The six-year molar was extracted the day the child presented at the clinic, and the abscess thoroughly incised and drained. A large quantity of pus was evacuated, drain inserted in wound, and it was kept open for

weeks. In fact, the wound did not heal very much, and several sinuses formed leading to necrotic bone. We saw the child every couple of days, and at each visit irrigated the sinuses with mild antiseptic wash, and probed and waited; several times we removed small pieces of dead bone. After about six months of irrigation of sinus, the tissues around the sinuses became quite inflamed and more pus seemed to discharge from them. With a pair of thumb forceps I could feel a large loose piece of bone held in only by soft tissues. With a knife this sequestrum was quickly freed, and it proved to be the entire ramus, as shown above. The periosteum surrounding this nectrotic bone was left behind, and was

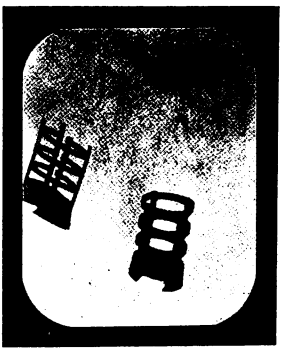


Fig. 24.



Fig. 25.

not injured, and new bone will, in time, be formed. Wound was packed with bismuth paste and gauze and wound began to cicatrize rapidly. Radiographs were taken about a month later, but were not good, as child moved. We lost track of the child shortly after this, but I think the child will have an entire new ramus form in time. There was very little deformity caused by the loss of the ramus.

Fig. 20 shows a photograph of a colored man, age twenty-three years, who came to the clinic with a complete facial paralysis, left side. History showed that one week before coming to us a dentist extracted an upper first molar that was paining him. Shortly after the extraction he noticed that he could not use the muscles on that side of his face, that his face looked thinner and flatter on that side, and, of course, blamed the dentist for this condition. We realized at once, that a possible injury of the fifth nerve in the extraction, could not cause a paralysis of facial nerve. When I saw him he could not use the muscles on affected side at all. The lower eye-lid drooped, and the conjunctiva was greatly inflamed as he could not close his eye to keep the dust out. We

could not obtain any history of the patient being exposed to severe cold, or anything that might account for the paralysis of the seventh nerve. I called in Dr. Stein, of the New York College of Dentistry, to see him, and he immediately became interested in the shape of the patient's upper central incisors (Fig. 21) and said, "I think he has heriditary syphilis, those centrals are typical Hutchinson teeth." We immediately obtained a Wasserman test, which was strongly positive. We also obtained a positive Wasserman from his brother's blood. We concluded at once,



Fig. 26.

that the patient was suffering from a gumma of the brain that was pressing on the seventh nerve, as it entered the stylo-mastoid foramen. This pressure caused congestion and paralysis of the nerve. We gave him two doses of salvarsan in rapid succession and then started deep inter-muscular injections of mercury. His condition cleared up entirely in about ten days.

Fig. 22 shows photograph of woman forty-five years old, suffering from sarcoma of upper jaw and face. History: She had a tumor of lower jaw about four years before coming to us. She was operated upon in Russia at that time, and the entire lower jaw on the affected side was removed. This case was inoperable and we lost track of the patient a few months after the picture was taken.

Fig. 23 shows a child six days old with a cleft of the hard and soft palate, and two erupted incisor teeth, lower. The cusps of the erupting temporary first molars, upper jaw, projected through the gum tissue, and erupted in a short time. The incisor teeth had to be extracted as the child hurt the mother's breast in nursing by biting the nipple. The



Fig. 27.

child was a very poor specimen, greatly under weight and size, and had great difficulty in feeding. She died in a few weeks before she could be brought into good condition for operation of the cleft.

Fig. 24 shows two Greenfield platinum roots inserted by the author, in an upper edentulous jaw. The thickest and heaviest-looking root had been in the mouth about four months when this picture was taken. The other root had been in about three weeks. There was no infection around either root and both were quite firm.

Fig. 25 shows a piece of necrotic bone removed from a patient's jaw where a Greenfield platinum root had been inserted about six weeks before. The entire "core" and quite a large piece of the surrounding bone came away, due to the infection which followed shortly after the insertion of the root. The wound quickly filled in with granulations after removing this piece of necrotic bone.

Fig. 26 shows a young woman twenty-eight years old, with a true ranula or cyst of the floor of the mouth. This cyst was probably caused by the occlusion of the ducts of the sub-lingual gland. The history showed that this swelling had been gradually becoming larger for several months, and at the time when the pictures were taken it had been troubling her for about eight months. There was a swelling in the floor of the mouth about the size of a hen's egg. This swelling was extremely soft and fluctuating, and extended across the floor of the mouth from the second bicuspid region, right side, to the same region on opposite side. It was distinctly elastic like most cysts. It was not painful, but troubled her a good deal in swallowing and talking, as it forced her tongue upward and backward into her pharynx. Upon aspirating this cyst about one and one-half ounces of thick glary fluid was drawn off. In a few weeks the fluid accumulated again, and the swelling became about the same size. The author then operated upon this tumor, making an incision antero-posteriorly, about one inch and a half long. The mucous membrane was carefully laid back and a thin wall cyst was partially dissected out before rupturing it. When the cyst ruptured a large amount of thick fluid was evacuated. The thin membrane of the cyst was carefully dissected out, and the operator was successful in removing about two-thirds of the entire sac. This membrane was very thin and it was extremely difficult to dissect, as it tore upon the slightest pressure. The wound was irrigated, packed with gauze daily, and allowed to fill in with granulations. Radiograph showed no obstruction in the ducts of the sublingual gland, and I believe that there was some catarrhal conditions that occluded this lumen and caused the daming back of the saliva and the formation of the ranula. No ducts in the floor of the mouth could be palpated. The patient was seen by the writer a year later and at that time was perfectly well and there had been no recurrence.

Fig. 27 shows neck of a man of thirty years of age with a thyroglossal cyst. He had had this fistula in his neck for many years. Sometimes it would close and remain so for four or five years, and then it would open again and discharge a thin serum. He said that he always had a sort of swelling at this region which his mother noticed shortly after birth. It had not troubled him for about five years until a few weeks before he came to us, when it began to discharge. Upon probing, a fistulous tract was found which extended upward and to the left about one inch and a half, and almost entered the floor of the mouth. The tract was about one-half inch wide and was lined with epithelium. The orifice of the tract was slightly inflamed and a dark red in color. It became slightly tender when the fistula closed and the secretions accumulated. The tract was injected with diluted peroxide, containing a color-

ing material, methyline blue, and under novocain the fistulous tract was carefully dissected out. By means of the injection the tract was stained before the operation, and in this manner it was easy for the operator to excise the entire tract, and to remove all the lining epithelium. The wound was then cauterized with carbolic and allowed to fill in with granulations. A permanent cure was obtained. These cysts are congenital, but may not present any symptoms until puberty or even later in life. The presence of these cysts or tracts are due to the failure of the thyro-glossal tract to be converted into a fibrous cord, portions of it remain in the form of isolated vesicles lined with columnar or cubical epithelium, and occasionally undergo abnormal development, forming tumors or cysts in the base of the tongue or upper part of the neck.





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New Jersey State Dental Society.

Discussion of Dr. Smith's Paper.

(Continued from January number)

Dr. Jas. B. Davidson, Newark, N. J.

I agree with Dr. Smith that the administration of $N_2O\&O$, in view of its rapid therapeutic action and its asphyxial disadvantage, is a work of specialization and should be recognized as such, thus eliminating the improper use of the same by inexperienced nurses, internes, and anesthetists who have not resolved the theories of administering this combination of gases to absolute practice, and exercising a control on its proportionate mortality in the hands of the unskilled. Dentistry, like surgery, can progress just in keeping with the amount of shock, fear and pain that it is possible to offset.

If legislation and faulty apparatus stood between practitioners of this age and successful dental procedures free from pain, as is the case in some of our neighboring countries, we could not expect America to stand foremost in dentistry. It behooves us to act, as suggested by the speaker, through mediums which will make possible efficient and scientific dentistry.

The tardy adoption of this medium by the surgical and dental professions has no doubt been due to the past lack of knowledge of administrative principles coupled with imperfect apparatus. Then, again, we have too few mediums from which knowledge may be gained concerning the true technique of work of this particular kind, due to lack of clinical advantages, and last, but not least, the lack of sufficient knowledge of the physiological effects of the gases on the human organs and brain, which together with difficulty in administration lead to its relative high mortality in the hands of the unskilled.

In the dental application of suggestive therapeutics and positive suggestion, the value of positive, well directed, concise and convincing statements have long since been conceded by our profession.

Very few of Dr. Smith's remarks on this subject are debatable, but I would further suggest that by the adoption of the following I think one is more liable to induce confidence and hope than by the methods suggested in the paper, viz.:

1st. The value of the general stage of preparation, which may infer attention to diet, intestinal conditions and the use of preanalgesic sedatives and preanesthetic narcotics.

2d. History of the patient as obtained by questioning, with special reference to kidney, circulatory and respiratory lesions by inquiring whether or not he has been ever afflicted with headaches, shortness of breath, swelling of feet or ankles, sudden blindness, vomiting and, in certain cases, direct reference to blood pressure.

If we adopt the use of anesthetics and analgesics in our daily routine work, we should at least be capable of recognizing the gross circulatory and respiratory lesions—hence the value of clinical experience to the dentist using anesthetics.

3d. Examination of the patient's physical condition with special attention to organs concerned. The value of this is first, to orient ourselves and, secondly, to impress thoroughness and command of situation to the patient.

4th. We should vouch for the patient's physical condition and give him definite assurance relative to his welfare, as it engenders confidence in keeping with our information as deduced from physical examinations.

5th. Very little positive suggestion is necessary after following out the above.

6th. Complete knowledge of technique is necessary in order to warrant our representations and descriptions of the merits of this anesthetic and the principles of operative procedure.

7th. Careful attention to after treatment—which involves in most cases merely rest.

I would like to emphasize the point that we all are capable of realizing that psychic force is less applicaple to the phlegmatic types and has greater effect on the nervous types—there its specific value is inestimable.

I want to agree with Dr. Smith in his view of the physiological effect of N_2O&O as an anesthetic. I believe our greatest success lies in the use of pure gases and it behooves every dentist to definitely look up the reports of the American Medical Association and resolve his conclusions in purchasing the gases to those recommended by said organization, which gases are absolutely pure and free from CO_2 and free nitrogen elements together with the higher oxides of nitrogen—because, with pure gases we are more capable of controlling the asphyxial phenomena.

As Dr. Smith has already stated the conclusions and opinions of this anesthetic by authorities (such as referred to in his paper which definitely state the special value of same in surgery), his review of the subject should certainly stimulate a more general adoption of this anesthetic, especially by the dental profession, and in view of the fact that most of our operative procedures are of short duration and are conducive to severe shock and pain, there is no doubt but that our duty lies in more careful consideration of its many virtues.

There are five cardinal principles upon which the technique of administration is dependent, as Dr. Smith definitely stated. It is the lack of recognition of these important qualities, which causes the failures of many dentists and anesthetists, especially when the mechanical design of the apparatus purchased is not capable of carrying out the necessary functions.

Great interference with surgical procedures is no doubt experienced by those unfamiliar with the definite symptoms of CO_2 and N_2O asphyxiation, and to this end experience is the only guide; consequently, special attention and study is advised in regard to the same. I believe that cyanosis is the controlling symptom in the recognition of these two conditions.

It has been my custom to meet this condition in a slightly different manner from that which the speaker advises—I supply nitro-oxid followed with oxygen to prevent recovery from the anesthetic instead of oxygen followed by nitro-oxid.

The adoption of these principles is the result of the experimental research work by our most prominent authorities, and we should not overlook their extreme importance—I refer first to the value of pre-anesthetic narcotics.

2d. To the use of pure oxygen, realizing that 80 to 95 per cent.

purity is superior to 20 per cent., with the remaining percentage adulterated, as is the case with air; also consider the better condition of our patients after the use of pure oxygen.

3d. Even flow of gases.

4th. With warm gases we have safety, increased value to life, more quiet and profound anesthesia, and more rapid absorption—being careful at the same time not to raise the body temperature.

5th. Rebreathing promotes economy in the use of these gases, with special reference to the value of CO_2 generated by the adoption of this medium and fewer bad results following its use.

6th. Positive pressure promotes greater absorption and makes possible intrathorocic surgery, more profound narcosis and more even anesthesia.

Science has proven the value of these mediums, consequently the limitations of this anesthetic are dependent upon the ability of the average anesthetist to master the above-named principles, recognizing that with the very young, asphyxiation is to be avoided, and that they rapidly come from under its influence and that epileptiform tricking is at all times possible; and likewise—with the very old, we have to recognize that senile charges tend in many instances to bring asphyxial phenomenal difficulties.

I will not take time to discuss further, or to take exception to any of the virtues of this anesthetic as mentioned by the speaker, but in regard to its disadvantages, I believe they are nine out of ten times due to apparatus, which has not been manufactured as a complete full proof mechanism from the standpoint of meeting the requirements when symptoms of the patients indicate changes in our technique.

Analgesia. In regard to analgesia. We should realize that $N_2O\&O$ plus air when used for analgesic purposes only promotes a disseverance of the cerebellum or sensory portion of the brain from the cerebrum or motor portion thereof or segmental anesthesia. I believe that the delivery of gases under measurable proportions and measurable pressures is the keynote of success, especially in the hands of the inexperienced in regard to the use of these gases for analgesic purposes, because it is conceded that inequalities in the delivery of our gases will, without a doubt, promote inequalities in our analgesic state, consequently, without them we expose ourselves to three conditions, viz.:

1st. Hilarity—due to too much oxygen.

2d. Unconsciousness—due to excess of nitro-oxid.

3d. Approaching the excitement state by inaccurate combinations.

Under this heading, with special reference to the classification of patients according to Dr. Smith, the truest value of measurable pressures is determined when we meet the particularly susceptible patient; especially when in the formation of our preparations it is possible to deliver a specific number of gallons to the case per hour, under measurable proportions.

If the afore-mentioned principles are incorporated in a modern dental apparatus our operating cost per case is, no doubt, well within the reach of all practitioners, because it completely relieves the inequalities of pressure and consequently promotes operating economy. You can, therefore, see by the foregoing that it is imperative that we avoid the use of simple apparatus.

In conclusion, in regard to shock as divided by Dr. Smith into physical and psychical; those of us who are not using analgesia and anesthesia of the type under consideration, do not realize the amount of shock we are responsible for, even if physical pain is not produced. The dread of being hurt is more wearing on the nervous system of the nervous type than actual physical pain; consequently, admitting the value of all local anesthetics, we cannot avoid physical and psychical pain other than by the use of the general anesthetic as a medium, and that best adapted is undoubtedly N_2O&O.

Against the development and use of these methods of greater safety and efficiency in operative dental surgery, there may be urged the objections that these methods involve a higher training and increased labor on the part of nurses and the operator; that certain new apparatus is required and that the office must meet the increased cost; these easily surmountable objections must be balanced against the disappearance for all time of the dissatisfied patient, the freedom from post-operative shock and the preservation of life itself.

Dr. J. D. Thomas, Philadelphia.

Mr. President, I desire to confine myself to the time allotted to each speaker. I had not received any notice that I was to take part in the discussion of this subject, and did not know that I was to do so until I arrived here at eight o'clock this evening, and, consequently, I have not had an opportunity to prepare myself to speak on the subject as its importance would probably warrant.

It appeals to my mind that it is timely just now to issue a word of caution on the subject of the administering of nitrous oxid for prolonged operations. I will refer to personal experience, and I do not mention this fact for the purpose of self-laudation, but the records of my office stand to-day at two hundred and eighty-eight thousand people. I do

not wish anybody to think that in that great number of operations there have not been dangerous cases, nor would I wish to convey that impression. On the contrary, from my experience I am free to say that nitrous oxid, instead of its being the safest of all anesthetics, is possibly the most dangerous of all anesthetics.

Dr. Smith.

I would like to ask Dr. Thomas, does he refer to nitrous oxid with or without oxygen as dangerous?

Dr. Thomas: Dangers of Nitrous Oxid.

I refer to nitrous oxid, pure and simple, for the reason that with any agent that is going to produce unconsciousness in the biggest man or woman inside of sixty seconds we will all have to admit that you are approaching the point of dissolution at a mighty rapid rate, and the mixture of air or oxygen is the antidote. While nitrous oxid has the reputation of being absolutely safe, this condition exists. While it was used in the dental profession alone for the extraction of teeth, its safety depended upon the fact that the appearances of danger were so great that even the veriest novice, from fright, would immediately cease giving gas and turn his attention to the resuscitation of his patient. It is a known fact that the greatest danger that we experience in giving nitrous oxid comes from its want of oxidation, as is exhibited in deep cyanosis, the suspension of breathing or the constriction of the glottis, but in the most dangerous cases one breath of air entering into the lungs, voluntarily or involuntarily, is sufficient to start the patient immediately on the road to recovery. That is why there have been so few adverse cases in the administering of nitrous oxid gas. We recognize that nitrous oxid gas is an absolutely inert element, its oxygen does not liberate itself at the temperature of the human body and consequently it goes in and comes out nitrous oxygen, and it carries with it this dual condition.

Asphyxia with Nitrous Oxid.

Nitrous oxid is as pure an anesthetic as any of the anesthetics now known, but it carries with it this state of asphyxia as well as its anesthesia, and under these conditions the exhibition of cynanosis or the want of oxidation constitutes the dangerous element in its administration.

It was at an operation at the Pennsylvania Hospital, in Philadelphia, for an amputation of the thigh, that Dr. Thomas G. Morton asked me if I would administer nitrous oxid gas for the operation, because it was a case in which ether was strongly contraindicated. It was at that operation where I realized that the dual effects of nitrous oxid was strongly apparent. I put the man under the influence of the gas and alternated a breath of air with a breath of the gas, and a breath of air with a breath

of gas (repeating), and in that way kept him under the influence of thorough surgical anesthesia for twelve minutes during the amputation of the leg, and the man recovered shortly afterwards and within a month was at Dr. Morton's office on a pair of crutches. That clearly proved to me that the dangerous effect of the administration of nitrous oxid was the want of oxidation.

Before that time, scientists had discussed what effects really were produced by nitrous oxid, and there were many that claimed that it was absolute asphyxia instead of anesthesia. Dr. Horatio C. Wood was the last of the scientists of Philadelphia to abandon the opinion that nitrous oxid is simply a cyanosis of asphyxiating agent. I succeeded after this case at the Pennsylvania Hospital in convincing Dr. Horatio C. Wood that nitrous oxid is a pure anesthetic, and would produce profound anesthesia without its accompanying asphyxia if admitted so as to oxygenize the blood. It was from that point that the fact was established that the asphyxia could be overcome by the admission of atmospheric air in proper proportions, which later has culminated in the mixture of the gas and oxygen.

I never administer gas under a hood. I wish to keep the lips in full view, because there the influence of the agent upon the blood will appear more quickly than at any other part of the body visible during its administration. There are many persons who will asphyxiate more rapidly than they will anesthetize. These dangers do appear, and I am always dangers do appear, and I am always particular in my lectures at the University of Pennsylvania to tell the students that they never will become proficient as experts in administering nitrous oxid until they have had occasion to throw one or more patients out of the chair on the floor and work with them until resuscitation becomes apparent. Then they will begin to recognize what they have to contend with by the symptoms of approaching dangers. I would say that there have been fifty or possibly a hundred cases in my experience where I have had to throw the patients on the floor and apply all resources for resuscitation, and, fortunately, we accomplished the purpose.

Possible Idiosyncrasy Against Gas.

Do not forget the question of idiosyncracy. I have known of one case where a dentist in preparing a cavity in a central incisor for filling wiped out the cavity with chloroform for rapid evaporation in order to dry the cavity as quickly as possible. While it was simply on a little point of cotton no larger than a pea, while wiping out the cavity the patient collapsed under the influence of the chloroform. This was simply a case of idiosyncracy, and so it is with nitrous oxid. There are patients that are just as easily affected by the

administration of nitrous oxid. I have had numbers of cases in which within a moment's time, at the second breath, patients have gone unconscious, which we ascribe to idiosyncracy. These are cases that you must necessarily watch very closely, because it would never do to keep a patient long under nitrous oxid who would be affected so quickly. It is not an agent that a man of inexperience or a novice should ever take the responsibility of using in any way without a thorough knowledge of the attending dangers. As a word of caution I want to emphasize all that Dr. Smith has said upon this point, that under no circumstances should an interne or a nurse of a hospital or any inexperienced attendant ever be permitted to assume the responsibility of administering nitrous oxide oxygen, because it requires a person of experience and an expert to recognize the dangers as they approach under the influence of nitrous oxide, operating as quickly as it does. The operator must be prepared to act with equal rapidity in the operation of resuscitation. He must be prepared and perfectly familiar with every phase, so as to recognize the dangers that are approaching and apply remedies. Mr. President, I think I have probably consumed the time allotted to me and will add nothing further. I have attepted merely to sound a word of caution, in which I have said that nitrous oxid is not entirely free from danger to the patient in its administration.

(The remarks of Dr. Thomas were received with a continued outburst of approval and applause, which increased in volume, with cries from all over the room, which was crowded to the doors by dentists from all over the United States, "Go on, "Go on," "Go on.")

President Thompson.

As it seems to be the unanimous desire of everyone present that Dr. Thomas shall continue, I will ask him to do so.

Dr. Thomas: Contra-Indication Against Gas.

Mr. President, in continuation of what I have said, resuming where I left off, the contra-indications against the administration of nitrous oxid oxygen are matters of grave importance. There are certain conditions under which gas should not, under any circumstances, be administered. I will give an illustration: A gentleman came to my office one afternoon, accompanied by his wife and sister. He was a stout man, and his condition was such that I at once diagnosed the evident presence of fatty degeneration of the heart. His lips were as white as his cheeks; he was short of breath. He wanted a tooth removed. The moment I looked at him I called his wife to one side and I said: "Mr. X—— is not in condition to take an anesthetic to-day, or to have this done. I wish you would take him home and call in your family physician; he is not well. After his physician has examined

him and he has secured his advice, if he then wants me to take out this tooth for him I will come up to his house to do it, but I wish his family physician to be present."

Physiological Effects of Nitrous Oxid.

The next day I received word that the gentleman had died at 10 o'clock that morning. That furnishes food for thought, and it shows the necessity of being able to distinguish among your patrons who should and who should not be subjected to the administration of nitrous oxid. Dr. Smith, in speaking of the effects of gas—and I do not mean this in any way to be a criticism of what he has said in his paper—but his understanding of the matter is a little different from mine. Dr. Smith has spoken upon the subject of nitrous oxid anesthesia as if it were produced entirely from the effect of the anesthetic upon the brain cells. That is not my understanding of the physiological effects. As I understand it, the gas is taken up from the lung cells and transferred into the circulation and carried to the remote portions of the body. The anesthesia so produced, in addition to its effect upon the brain cells, begins in its effect with the fine filaments of nerves in the extremities, and as the blood courses through, laden with the anesthetic, the peripherals first become affected, and it approaches further and further to the larger nerves, and if it be carried far enough it would reach the great trunk of the medula and the spinal chord. I compare the effects of anesthetics to some conditions of intoxication by alcohol, only anesthesia is brought about by inhalation, while intoxication is brought about by alimentation, but physiologically the patient is in exactly the same condition to a like extent. A drunken man may be conscious enough to find his way home, yet he may fall down and receive an injury and never know that he has been hurt until he becomes normal. That is because the extremities of the nerves are paralyzed to the extent of not being susceptible to pain. That is the condition in anesthesia. The brain becomes paralyzed, but the nerve extremities of the whole body are likewise paralyzed, and are incapable of receiving impressions of pain. That is the basis of the subject of analgesia: if a patient be partly under the influence of an anesthetic, the peripherals are benumbed, and he may be conscious enough to be able to see a knife drawn across his hand and yet feel no pain from the cut. That is a form of analgesia.

On this question of asphyxia and the dangers approaching from it, they come about, not by the contact of the nerve trunks or the nerve trunk in contact with the anesthetic, but from the moment you apply nitrous oxid to the respiratory organs you cut off a supply of oxygen, and the moment you cut that off there is a demonstration of asphyxia and contortions and contractions of the muscles, and I have even seen

them come to absolute convulsions under the influence of narcosis simply from the want of oxidation. As soon as you supply nitrous oxid, which is an inert gas, you cut off the atmospheric air, the important element upon which all animal life depends for its sustenance, and it is this want of oxygen which produces the dangerous, disagreeable looking exhibitions. It is the want of oxidation upon the vaso motor nerves that produce all of these evidently dangerous conditions, and which will produce or cause the suspension of breathing and the constriction of the glottis and all those conditions which accompany the administration of nitrous oxid where atmospheric air oxygen are not admitted. (Long continued applause.)

President Thompson. I will ask Dr. Smith to make the closing remarks on his paper, if he desires.

Dr. Smith. Mr. President, it has given me a great deal of pleasure to be called upon to read a paper of such vital importance to the members of the dental profession. I wish to thank you for your kindness, and especially do I wish to thank these able discussers who have made addresses and to thank them for their complimentary remarks. It gives me a great deal of pleasure to note what a wonderful stride this anesthestic has made during the past two years. Dr. Horace Wells gave us this anesthetic in 1844. He demonstrated to us the anesthetic properties of it, and you may say that it has lain dormant ever since until about two years ago. We now have specialists in nearly every line of work in the dental profession. We have the orthodontist, the extracting specialist, the porcelain worker, and a number of others, and we now have a later specialist, the analgesiac specialist. A number of cities through the United States are supporting specialists who are devoting their entire time to the practice of analgesia. That specialist conducts this work along the same lines as the extracting specialist. I know of at least a half a dozen who are practicing it now among the dental profession who did not favorably regard this as an anesthetic a year ago. Some looked on it as a fad especially adapted for producing analgesia. I must say that if it is a fad it is a practical fad, and in the hands of one who has spent a little time in becoming proficient in its use it will bring returns to him in addition to rendering dual service and better advantage than by the old methods. I am, naturally, enthusiastic when I get talking on this subject, when I know of the vast amount of work that can be done with that anesthetic without pain to the patient. It is a success in the hands of practitioners; we know that. I never saw a patient that is willing to be hurt, and patients will prefer the dentists who can give them proper work and at the same time eliminate pain. The man who

is using analgesia in his work, and who is proficient in it, and who knows how to handle his patients in a proper manner, is the man who is going to be busy.

I wish to verify Dr. Henahan's statement in regard to the machine. It is more than a machine that is necessary to administer nitrous oxid-oxygen. It is true, we must have a good machine, but the man who depends on the machine to be able to diagnose his case I think will fail.

I wish to state my experience with nitrous oxid-oxygen in various cities of the country which prompted me to start a course of instruction, because I saw that the great need of this work was to show many of the dentists that all that was necessary was not alone a machine. They would get a machine, but they did not get good results, and they became discouraged with it, and the anesthetic appliances went back to the supply house and the machine companies. I think it is only a question of time when nitrous oxid-oxygen, analgesia and anesthesia will be a branch of instruction in the various colleges. There are not very many dental schools in the country to-day that are giving a scientific course in anesthetics. It is a subject that is wrongfully overlooked. We are taught through our three years in college how to prepare cavities and how to put in gold fillings, but how many of us have been taught on the subject of the scientific administration of anesthetics or the physical diagnosis of the patient. I know of only three colleges to-day that have introduced this branch and that are showing students anything in practical analgesia. They added that to the curriculum in the last term of the college course.

Ether Added to Nitrous Oxid.

I have had something like five thousand cases for major surgery, and I am proud of the fact that I have had very gratifying results. Coming back to the ether proposition, in the addition of ether to nitrous oxid a great many look upon that as being dangerous. That is not true. I think it is much safer to administer a small per cent. of ether in connection with this anesthetic than to continue with nitrous oxid-oxygen in trying to produce surgical relaxation which results in extremely high blood pressure.

It was not very long ago that I was called upon to administer to a man eighty-two years of age. The blood pressure was very high at the time. I started to administer nitrous oxid-oxygen, and I found that I could not produce the relaxation desired by the surgeon without administering ether. Dr. Tuttle mentioned a case he had, a patient at the Philadelphia Hospital for forty-five minutes under anesthesia. I was present at this operation, and I think it was one of the most beautiful anesthetizations I ever saw. This was a very prominent physician, and

he had him under the anesthestic forty-five minutes during an operation for double hernia. There was no ether used in this case, and it was very gratifying to me to see this case handled in such an able manner.

I was very glad to hear Dr. Thomas' discussion, and to have him bring out the point as to whether the nitrous oxid produces an effect upon the brain itself. The best theory we have on this is advanced by Dr. Crile, of Cleveland, to the effect that it is a specific anesthetic action upon the brain itself. When pure nitrous oxid is administered, you are not admitting oxygen, and naturally cyanosis will appear. When you add oxygen to the combination it is entirely different. It is not as scientific to administer nitrous oxid without oxygen, because then you have to count on the patient. You must know the fundamental principles of anesthesia in order to give your patient the benefit of the highest professional skill.

Safety and Dangers.

I don't think there is any anesthetic that is absolutely safe. Any agent that can make an individual unconscious is dangerous, and I would much rather go right out on the street and pick up any individual and have him give me ether than to have the same individual give me nitrous oxid-oxygen. It has been stated here to-night that it is not a safe anesthetic in the hands of a novice, but I say that in the hands of one who has made it a study it is the safest anesthetic we have to-day. This was recognized by the American Medical Association. Dr. Henderson has proven that rebreathing is a superior method.

I wish to correct a statement that came to me this afternoon in regard to one of the cases I had in the clinic this afternoon in the adjourning building. It was reported that the case collapsed. This is not true. The patient was depressed, but was not in a dangerous condition. The pulse was beating regularly and a statement of that kind I certainly wish to correct, because it is not doing me justice to have anything like that circulated. I wish to thank you for your kindness. It is with a great deal of pleasure that I have been with you at this meeting. I have certainly enjoyed myself and I hope that I will be in a position to attend many more meetings of The New Jersey State Dental Society.

Second District Dental Society October Meeting.

A regular meeting of the Second District Dental Society of the State of New York was held on Monday evening, October 13, 1913, at the Kings County Medical Library Building, 1313 Bedford Avenue, Brooklyn, N. Y.

The president, Dr. W. G. Lewis, occupied the chair, and called the meeting to order.

The secretary read the minutes of the last meeting, which were approved.

Dr. Hyatt. I think it would be more desirable at this time, than at any other time in the history of the society, that a committee on membership be appointed. Through the reorganization plan of the National our profession is entering on a new era, and a person who becomes a member of the district society, becomes at the same time a member of the State and National societies; so it seems to me we should sweep away as much as possible, and as soon as possible, any petty feeling that might have existed in the past, and start to work to bring into our society every reputable practitioner in our district. A plan should be devised whereby all reputable dentists should be tabulated; they should be divided into districts, and the committee should be large enough to visit these men personally, and give them the knowledge that being a member of the district society makes them a member of the State and National societies.

(A membership committee was appointed as suggested.)

Dr. Stevenson. The Mouth Hygiene Committee has been asked to furnish articles for the columns of the daily prints, on the subject of mouth hygiene. The papers have applied to us, as representing the society, and if we do not furnish them with these articles, information will be obtained from other sources that would perhaps displease us. We have refrained from supplying any contributions of this kind because we thought some members might not approve of it; but the conclusion of the committee, after talking it over, is that we supply the material for these contributions.

I move that the committee be empowered to furnish to the daily prints articles on mouth hygiene for the benefit of the public.

Dr. Shea. In what way are the articles to be presented—as coming from the society, or from individuals? How are they to be signed?

Dr. Stevenson. That is a matter that will depend a great deal on the editor. Most editors would not accept articles unless signed, and we intended to have the articles signed by members of the society. Such articles would have more influence.

Dr. Babcock. The editor would probably want the article signed as an evidence of good faith; but might not require the name to be printed. Why could not the articles appear as authorized by the Second District Dental Society? You could use a signature in that way, and that would do away with the feeling that it is not ethical to place such matter in the public print.

Dr. Hyatt. I hope the question of ethics will not be brought up in this foolish way at this date. There should be some person willing to stand back of the statements made in such articles, and if the committee can get any man to sign such an article, we should be willing to back it up. At the First District Society meeting recently it was mentioned that there had been an article in the *New York Times* that attacked orthodontia. Dr. Gillett replied to it, being at that time the vice-president of the society, and fearing that some mal-minded man might misconstrue it, he refrained from using his name, and signed "D.D.S." If he had signed it "Gillett," it would have done infinitely more good; signing it "D.D.S." carried no weight to the minds of many who read it.

I hope to live long enough to see the men in our profession sign their names to articles of that kind for the benefit of the public, and I hope every man who writes such articles will sign them, and that this society will stand by him.

Dr. Babcock. My remark was not an evidence of cowardice at all. As far as I am concerned, it makes no difference to me who writes so long as the facts set forth are true and scientific.

(The motion was carried.)

Dr. Hillyer. Dr. Smith, president of the State Society, is with us, but must leave very soon, and I would like to introduce him to the members and have him say a few words to us before we take up the discussion of the paper.

Dr. Smith. Mr. President and gentlemen: Before arriving here, I meant to say to you that all previous meetings of the State Society would seem insignificant in comparison with the one we expect to hold next spring; but I find myself very much handicapped because I am in the presence of several ex-presidents of the State Society, and I do not wish to seem discourteous. However, I will say that if it is possible to have a better meeting than ever before, I am sure every member, including these ex-presidents, will be glad of it. The encouragement I have received in meeting and corresponding with different members from different sections of the State has been very marked, and has been an inspiration. At this time, when the society merges from a membership of about 250 to over 1,300, I think it adds very much to the responsibility of the members and also to the possibilities of the society.

The New York State Dental Society has, since its organization, been very constructive and progressive. About ten years ago, a decided

step was taken in advance, I think, when instead of taking whole sessions, or parts of sessions, with business matters, all business was delegated to an executive council, thus giving up the entire time of the meeting to scientific papers and discussions. Then, merging the membership into a larger one, which, I think, was first recommended by your Dr. Hillyer, was a great advance, and I think there is opportunity for still greater work.

If it were not for the lateness of the hour, I should like to outline some of the plans for the future, but I will not to-night.

There seems to be an opportunity this year for doing more work than in the past through the Hygiene Committee, especially because Dr. White has recently been made a member of the State Board of Health to represent the profession, and he has had the promise of an expenditure sufficient to procure a lantern with slides for each of the nine districts. These can be used in the districts for lecture work. I do not know just what the situation would be in the First and Second Districts. In the up-State districts, comprising many small towns, and even country school houses, it is proposed that an acetelyne gas lantern be provided, so that these lectures can be given. This will mean a slight expenditure of money probably in outlying districts. Whether that will apply to Brooklyn and New York, I am not sure; but my purpose in bringing it up to-night is this—you might think best to authorize your local committee to make some necessary expenditures. Some of the other districts have made such provision—I visited the Ninth District on Friday evening, and they took action to that effect. I do not wish to forestall the work of the chairman of the Hygiene Committee, but I know that is one of the things he has in mind.

I am very glad to be with you to-night, and I hope to see everyone of you in Albany next May.

Dr. Hillyer. I would also like to introduce Dr. W. A. White, of the State Board of Health.

Dr. White. Mr. President and gentlemen: There are specialists in every profession. We have them in our own profession, and some think I have digressed from the general practice of dentistry and made a hobby of mouth hygiene. If I have, I am glad of it, because I think the time has arrived when no feature of dentistry is of such importance as this, or is attracting such attention, not only in the dental profession, but in the medical profession throughout the United States. The subject is now becoming a household word.

It is with much pleasure that I announce that after having pursued

the work with your associates, Dr. Hyatt and Dr. Wheeler, and Dr. Belcher, of Buffalo, the cause progressed so much that the Civil Service Commission thought it of sufficient importance to make it a special department.

I do not believe that there is a feature connected with the dental profession that is of so much importance as mouth hygiene. It is not necessary for you to be a lecturer; you can be a teacher of mouth hygiene every day of your life at your chair, especially if you know as well as I, that phophylaxis is an important feature of our work.

Last year it was my privilege to visit sixty-three cities and towns in your State. I delivered seventy-three lectures, and spoke to a great number of school children. I also delivered lectures to mothers' clubs, nurses' associations and other organizations. This year we are making an effort to increase the work to such an extent that we will double the number of children to whom we will lecture.

Next Monday morning, I expect to commence the work in twenty-six parochial schools.

The call for the lectures outside of the First and Second Districts is so great, that it is impossible to meet the demand, and I am quite positive that there will have to be further appointments made. The work is taken up readily; the instruction is given by the aid of lantern slides, and the children grasp it as easily as any subject taught in school.

Walking down the street in Saratoga last June, following the lecture given there, there was a little urchin who, as I passed him, stopped me and said, "Do you see what I have?" It was a toothbrush and a package of tooth paste. "I am going to clean my teeth; I am not going to have any bugs in my mouth!" Judging by the result from that little boy, whom you would not think would even pay attention to what had been told him, I felt well repaid.

Another time I met a man who said, "Doctor, did you lecture in Albany a year ago?" I said, "Yes." "Well, I bought a toothbrush, and I cleaned my teeth, and now look at them."

I will not tell you the amount of work we undertake to do, but in order that you may know the value of mouth hygiene, I want to quote the words of three of the most eminent men in the medical profession.

Dr. Mayo, who is a great surgeon, and lives in Rochester, Minn., at a banquet tendered to Dr. Brophy recently, made this statement: "Preventive medicine lies in the hands of the dental profession."

At the International Dental Congress, Dr. Knopp, of New York, who is recognized as a great specialist in the treatment of tuberculosis, said: "I defy the most skilful physician to either help or cure a tubercular patient who has decayed teeth in his mouth."

Dr. Jacobi, who I suppose is known to all of you, and who stands high in the medical profession, gave this opinion: "If more attention were paid to the care of the mouth and teeth, there would be less sickness among the children and less sickness among the adults."

Dr. Dunning then read the paper of the evening, which was illustrated with lantern slides.

Discussion of Dr. Dunning's Paper.

Dr. Clinton B. Parker. The first thing I should criticise at all, is in the essayist's opening remarks—about the physician and his method of operation with his forceps. I think the essayist was very mild in what he says. From several cases I have seen, I should have used some language I did not learn in Sunday-school.

He also speaks of the dentist. I think as a rule the dentists are more to blame than the physicians in the cases he has cited; in their lack of attention to these ulcerated teeth and these fistulous openings which they treat, or which they think they are treating. The method of procedure and practice which Dr. Dunning has shown you, I believe is the only right kind of treatment. It has been my procedure for several years in operating, to follow, as I believe he does, the surgical treatment—not the medicinal treatment that the average dentist uses.

I think the society is very fortunate in having seen these pictures, and in knowing that we have a man who is able to do that sort of work. More of us can do it, if we will. I remember particularly his speaking about the dressing of bismuth paste and gauze. It is one of the greatest things we can use. Iodoform I have no use for, but the bismuth with gauze you can place where you want, and it will stay there. That has been my customs for several years in operations of that character, and with the most satisfactory results. It will apply also to pyorrhea cases. You will be surprised, where you have those deep pockets, if you will pack them with gauze and bismuth paste.

Dr. Shea. Of course, discussing a paper does not mean flattering the man who presents it. When you see a number of X-ray pictures, you can be mistaken sometimes. I have been deceived by a number of them. I have been taking them for five years, and got to the place where I let someone else take care of the work, and the man has become expert, or is so acknowledged. I can show you a case which looks like a positive fracture —there is not a man in the room who would not swear it is a fracture, but when we cut down to the bone, we could not find it. There have been a number of cases that have deceived me and the radiologist. The great point is to be able to make a diagnosis. I think anyone of us

after we made the diagnosis could do the work. Diagnosis, of course, does not mean that a favorable prognosis will follow in every case.

Dr. Dunning presented a fractured jaw wired and behind some of the teeth were two roots that had not been removed. I do not believe the doctor left those there knowingly.

Dr. Hirsch. In reference to the root canal filling, the doctor spoke of using asbestos. How does he know it reaches the apex, and what method does he use to fill the canals.

Dr. Dunning. In those abscessed conditions where the roots are amputated, I think it is a good thing to go through the apex and fill through to the infected area a couple of days before the operation; this should be done by a good, competent dentist. Open up the canals absolutely, and go right into the bone, and flush it out with a powerful antiseptic, and then pack it with a permanent dressing of asbestos and cement, and you will have it absolutely isolated from the field of infection. Then go through the external plate, and you will only have to think of the necrotic area as you are treating it.

Dr. Ottolengui. Why is cement and asbestos better than gutta-percha?

Dr. Dunning. I do not do any root canal filling myself, and I do not say it is better, but any permanent filling that goes to the apex of the tooth will serve.

Dr, Ottolengui. What is the object of the asbestos? I never heard of it before for root filling.

Dr. Dunning. It is a thin fiber that you can carry to the end of the root; but I suppose any permanent filling would answer as well.

Dr. Hirsch. I have used gutta-percha for a number of years, and the patients come back with perfect results—no trouble whatsoever.

Dr. Dunning. Any good, thorough method of absolutely sealing the root is all I ask for.

Dr. Babcock. I never had any experience with asbestos, but if you take a piece of charcoal, and put it under the microscope, you will find it is rough and jagged, and people who have used it for cleaning their teeth, have had pyorrhea develop. If you use asbestos, I do not think you will have that co-aptation with the canal walls that you get with gutta-percha.

Dr. Dunning. I agree with Dr. Shea that a radiograph can be "faked," but I know these have not, because they have been taken by a man whom you all know—Dr. McKee.

After a radiograph is taken, I do not know how you can cut down and not find a fracture, if the radiograph shows it is there.

I would not make a diagnosis of a suppurative condition purely by a radiograph, and any man who would is a poor surgeon. Just because a person has a cloudy picture on one side, it would be wrong to operate without any further justification, if there is no pain or other symptom.

Dr. Shea. I do not want Dr. Dunning to think that I wanted to cast doubt on his pictures, but it is possible that an osteitis, totally different in two different cases, will look almost alike to us unless we are familiar with the cases. Dr. Dunning misunderstood me in reference to the radiograph, that seemed to show a fracture. It looked like absolute fracture in a particular position. The radiologist diagnosed it as such, and the other doctors admitted it. My assistant went in, and could not get any signs of a fracture at all. I thought it was strange, and after consulting with the other doctors, I cut down to see if there was a fracture, and there was not. I have the plate, and it is a freak plate.

Dr. Dunning. What was the reason for cutting down?

Dr. Shea. To make sure there was not a fracture.

Dr. Dunning. Was there any deformity or mal-occlusion?

Dr. Shea. Yes; the man had pain on motion. He could not open his mouth without pain. There was no inflammation, and I thought there was trouble in the articulation at the joint, but the picture came back, and after everybody decided it was a fracture, we found it was not.

Dr. Dunning. Could it not have been an old united fracture?

Dr. Shea. I think that would show on the picture. Of course, it depends on the length of time. There was no sign of inflammation.

Dr. Hyatt moved a very hearty vote of thanks to the essayist, which was unanimously carried.

Adjournment.



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The Golden Anniversary of the Illinois State Dental Society.

The Illinois State Dental Society will celebrate its fiftieth anniversary in Chicago, March 23-26 inclusive. It is prophesied that this will be the largest dental meeting ever held; that it will be the best; that there will be a greater number of clinics than ever before; that the clinics will be presented in a manner unique in the history of clinics; that the orations, essays, discussions, and finally the banquet, will be of the highest possible quality.

It is probable that all these anticipations will be realized. The Illinois State Society never does anything half-heartedly. The Chicago Dental Society, when it was known as the Odontographic, conducted the greatest dental meeting ever held by a local society. The attendance, over twenty-five hundred, has never been equalled on any similar occasion. What, then, are we to expect when the State and city are cooperating in this great undertaking? What else but a great achievement?

The literary sessions will include a symposium on the "Illinois State Dental Society; Its History, Achievements, and Present Standing." We are promised an "Oration on Operative Dentistry" and an "Oration on Prosthetic Dentistry," with a special discussion on "Modern Crown and Bridgework."

International Day.

The plan for clinics at this great meeting is the most remarkable and gigantic undertaking of the kind ever conceived. The clinic will cover three days. March 23d will be known as "International Day." Clinicians from various States, from the Dominion of Canada, and from foreign countries, will be grouped under banners indicating the localities to which they belong and each will demonstrate the best that his State or country may have to offer. These men will be selected after communications with and recommendation by the officers of local and State societies, and undoubtedly will be the ablest men of their sections of the world.

Illinois Day.

On the second day of this clinical congress the clinics will be given by members of the Illinois State Dental Society. It is stated that "two hundred men will demonstrate the best that Illinois can produce, and in a way that will be unique in the history of dental clinics." The writer has been privately informed of the plan by which these Illinois Day clinics will be presented, but prefers not to anticipate the committee in charge, by divulging this at present. Suffice it to say that no such method of giving clinics was ever before conceived, and that the marvelous feature of the scheme provides that every man who so desires may see every clinic presented, in every detail, and in perfect comfort. The clinics are to be classified and divided into fourteen sections, viz.: gold foil, gold inlay, amalgam, cements and enamels, porcelain inlays and jacket crowns, dentures, full and partial, removable bridges, fixed bridges, individual crowns, therapeutics, orthodontia, surgery, analgesia and anesthesia, public service. These sections will be in separate rooms, each accommodating comfortably two hundred or more persons. Each clinical section will include from fifteen to eighten clinicians, with a chairman who will give a brief lecture, fully explaining the features of the work in progress.

Chicago Day.

The third day of the clinics will be known as Chicago Day. On this day will occur the fiftieth anniversary of the Chicago Dental Society. On this day the clinics will be given solely by Chicago men in their own private offices. The day will be divided into definite periods so that a visitor

may select the various clinics that he may desire to attend, and may see them all by going from office to office, according to announced schedules. The clinicians will be at their best, working in a familiar environment with all their accustomed conveniences at hand. The visitors also will undoubtedly enjoy calling on these men in their own homes, and discussing with them their individual notions on practice, and the conduct of a practice.

Banquet. A great banquet will be held at the Hotel La Salle in the evening, and will undoubtedly be an historic occasion, especially as ladies will be in attendance. Each guest will receive a souvenir Historical Booklet, dealing with the origin, progress, achievements and contributions to the advancement of dentistry made by members of the Illinois Society.

Exhibits. The entire eighteenth floor of the La Salle will be utilized by manifacturers in what promises to be the greatest display of dental appliances ever gathered together. One afternoon will be devoted to demonstrations in this exhibit.

As we go to press, we learn with regret of the demise of Dr. J. N. Crouse, one of the foremost figures in dentistry for the last quarter of a century. A more detailed account is not possible in this issue.



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DR. J. H. CALLAHAN, of Cincinnati, read a paper this winter before the First District Dental Society of New York. I don't know why I said Callahan, of Cincinnati, except, perhaps, that I thought I ought to compliment Cincinnati; because it is not necessary to identify Callahan by mentioning the village where he works. Everybody that knows anybody knows Callahan. If I were writing in Europe, I would call him "Callahan of the United States," just so that Europe would not get any credit.

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DR. GILLET, the president, introduced him as "Sulphuric Acid Callahan," but I guess that hereafter we will remember him more on account of his recommendation of "Rosin" for filling root canals. But stop a minute. There I am misrepresenting Callahan right at the start. He particularly explained that he does not use the rosin to fill the root canals, but only as an "adjuvant" when filling canals with gutta percha. I like that word "adjuvant" don't you? Really I don't know whether I feel more grateful to Callahan for telling us about his use of rosin, or for introducing me to that word "adjuvant."

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AFTER THE MAIN MEETING, a choice crowd of the lesser lights, who are nevertheless noted for their luminous ideas, even though they are tongue-tied in the regular session, flocked over to the Manhattan Grill, and completely surrounded a round table constructed to fit ten. As soon as the lemonades, vichy-and-milk, cold-tea-with-lemon, and roast crackers with cheese had been ordered, about five men started to speak at once, but the Brother who is usually most mute in meeting talked louder and more persistently, and more continuously than the other four, until one by one they gave up the contest, and all the rest of us finally gathered from the fog of words this sentence: "What does that word adjuvant

❖ mean anyway, and whatever it does mean why does Callahan use it for
❖ filling roots?"

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RIGHT AWAY eight out of the other nine (present company being, as usual,
❖ excepted) began to explain the meaning of "adjuvant;" but little by little
❖ our Best Root Canal Fellow, I mean Filler, got the floor and held it
❖ against all comers. Said he: "It amused me to hear Gillet call Callahan,
❖ 'sulphuric acid' Callahan, because I happen to know that Callahan scarcely
❖ ever uses sulphuric acid for cleansing root canals; he uses sodium and
❖ potassium, just as all skilful men do. Now in regard to this new pro-
❖ position of his to fill the canal first with rosin——"

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"HE DOES NOT FILL the canals with rosin" interrupted the Mute Man, "he
❖ floods the canal with a rosin solution, and he called that an adjuvant. I
❖ asked what an adjuvant means, and I thought you were going to tell us;
❖ instead of which you begin talking about sulphuric acid. Now if you
❖ know what an adjuvant is, please tell us, because if it is a good thing I
❖ want to order a gross right away."

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THEN REPLIED the Canal Worker, with a smile of tolerance for his inter-
❖ locutor: "Why everybody knows what adjuvants are and they don't
❖ come by the gross either." I presume he really did know, or he would
❖ not have said so, but I observed that he did not enlighten the others. It
❖ will be noted that about two paragraphs back, it was stated that "pres-
❖ ent company," meaning, of course, the "present writer," was also mum
❖ about explaining the meaning of this word. As they say about Postum,
❖ "there was a reason." Never having actually used the word himself he
❖ felt that he could scarcely claim to have a speaking acquaintance with it,
❖ but he happens to own a perfectly good Standard Dictionary, and he
❖ looked up that word "adjuvant" before he went to bed. And therein he
❖ found a very excellent definition.

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"AN ADJUVANT," says the Standard Dictionary, is, "Any substance designed
❖ to assist the principle means." Please read that twice, or as many times
❖ as you find necessary to fix it firmly in your mind. It may seem to you,
❖ Dear Reader ("pardon the familiarity, but this appellation is permitted to
❖ editors by time honored custom"), that I have wasted a great deal of
❖ space over this word "adjuvant" and that I ought to get down to the
❖ milk in the cocoa-nut. But you are wrong; I have wasted no words, and
❖ this "adjuvant" idea is the milk in the cocoa-nut. It is not Callahan's
❖ purpose to ask us to fill root canals with rosin, but to use a rosin solu-
❖ tion as an adjuvant; as "a substance designed to assist the principle
❖ means," the principle means of filling the canal being the old reliable
❖ gutta percha cone. Therefore it is not a waste of time to so explain
❖ Callahan's newest proposition, that no one will misunderstand it, as was
❖ the case with his sulphuric acid method.

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WHILE WAITING FOR our milk-toast and apollinaris, it may be as well to
❖ really explain Callahan's new canal filling proposition that you may in-

telligently comprehend the further discussion which occurred Around the Table. Callahan recommends a solution of twelve grains of rosin in three ounces of chloroform to be used as the adjuvant. He says that the best rosin for the purpose is that made for the violinists, and purchasable at leading music stores. The formula makes a thin solution. A thicker solution will not penetrate the tubuli, but this thin solution will do so, when used correctly, at the same time acting as a solvent for the gutta percha cone.

CALLAHAN'S METHOD is to thoroughly cleanse and then thoroughly dry out the canal, flood the same with the rosin solution, and then introduce a gutta percha cone, moving the same in and out with a pumping motion. He says: "The pumping motion forces the rosin into every opening, and at the same time dissolves the periphery or outside of the gutta percha cone, which becomes more attenuated, slips farther and farther towards the apex, surrounding itself with a mixture of gutta percha and rosin, which sticks tightly to the canal walls and makes the gutta percha more stable and proof against the action of body fluids, or substances with which it may come in contact."

CALLAHAN SHOWED numerous actual specimens, as well as beautiful lantern slides of the same, in color, made with the Lumaire Color Process plates, that were most convincing evidence of his statement that the resinous solution penetrates the tubuli. He admixed stains with the chloroform-rosin solution, and sections of the filled teeth showed the stain radiating in all directions into the dentinal tubuli, and of equal importance, penetrating into minute tributaries from the main pulp canal. Indeed, in several cases tiny canals of this character became evident under this process of filling that would scarcely be expected to exist by those who have never made sections of teeth and who, therefore, believe that a root canal is always a single continuous channel, from pulp chamber to foramen.

NOW THAT YOU KNOW what they were discussing we can hark back to the Table Talk. "As I was saying," resumed our Leading Canal Worker, "Callahan's sulphuric acid proposition has never been entirely understood by the majority of dentists. Anyway, the main point, as Callahan truly said, is to first get the canals cleaned out, and whether it is done with sulphuric acid, or with sodium and potassium, it then remains to thoroughly seal the foramen. One reason why I like the sodium and potassium treatment is that it not only enables us to remove the contents of the canal, but at the same time it acts as a germicide and sterilizes the tubuli. After that, if it really be true that the rosin solution hermetically seals the foramen and the tubuli, why then I think Callahan has brought us a good method."

"THAT IS TRUE ENOUGH," said the usually silent gentleman, "but if I understand Callahan's adjuvant solution, it acts as a solvent of the cone, is thin enough to penetrate the tubuli, and by doing so deposits a resin.

❖ Now as a matter of fact do we not accomplish the same thing when we
❖ flood a canal with eucalyptus? That is a gutta percha solvent, and prob-
❖ ably holds a resin in suspension also, which may be deposited in the
❖ tubuli."

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"LET ME CORRECT YOU," interjected the Chemist Person. Eucalyptol is
❖ a camphor, not a resin. Camphor is a crystaline substance distilled from
❖ the bark of the camphor trees. It is a sedative and antispasmodic, but I
❖ cannot see how it would be useful in the tubuli, except, perhaps, that it is
❖ not soluble in water. Now, resin is made by distilling with alcohol and
❖ then precipitating with water. It is an oxidized terpene. There are three
❖ kinds of resins, the true resin, gum resins, and oleo resins. The true
❖ resins are hard compact products of oxidation made up chiefly of what
❖ are called "resin acids," which admixed with fatty acids, are capable of
❖ saponifying with alkalies——"

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"WAIT A MOMENT," cried the Old Practitioner, "spare us a chemical lecture.
❖ Keep it for your class. I can't see what difference it makes whether you
❖ fill the dentinal tubes with a camphor or a resin, since both are insoluble
❖ in body fluids. Don't forget that they saved the obelisk in Central Park
❖ from destruction by filling the pores of the soft stone with paraffin. And
❖ also remember that quite a number are recommending paraffin as a root
❖ canal filling. And by the way, let me tell you a story that will be new to
❖ you youngsters. Many years ago we had in the Odontological Society
❖ a man who would always claim that "five years ago" he had done any
❖ new operation that might be described at a meeting." "His descendants
❖ are with us yet," said the Irreverent One, "but don't let me interrupt the
❖ story." ."Well," continued the Ancient of Ancients, "one night a few of
❖ us were in the Grill of the old New York Hotel, and we plotted to try a
❖ little trick on this Constant Claimant. At the next meeting, one of our
❖ number arose and seriously described his success with common tar, as a
❖ root canal filling. Immediately arose our versatile member and he spoke
❖ his little piece somewhat in this fashion:

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"'I AM VERY GLAD that our young friend has reported his experiences
❖ with tar, for though I have been using it myself for some six or seven
❖ years with marked satisfaction, I have hesitated to report it for fear it
❖ might be looked upon as too empirical a practice. And yet, why not use
❖ tar? Is it not common custom in the South to use tar on the bottoms of
❖ boats to make them water tight, and is it not moisture above all things
❖ else that we endeavor to keep out of root canals? My method is to roll
❖ the tar into fine cones, which I keep in a cool place, to render them hard,
❖ and thus easily forced into the canals. Then with a blast of warm air,
❖ the mass is slightly softened, and a second cone is forced into the first,
❖ and Gentlemen, it is my belief that not only is the foramen sealed, but the
❖ tubuli of the dentine also.'

"THIS WAS TWENTY YEARS AGO," continued the Old Practitioner, "and it was looked upon as a joke at that time, as no one believed that roots had ever been filled with tar, save in the imagination of the speaker. Yet to-night Callahan has described in a serious and scientific manner a very similar procedure, for after all does not tar come within the resin group?"

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"THAT DEPENDS," exclaimed the Chemical Expert, "upon whether you are alluding to coal-tar or wood-tar. The former is obtained in the manufacture of coal-gas, and is otherwise known as gas-tar. Wood-tar is made by a distillation of pine or other resinous woods. The conversation has taken a curious turn, and really it might be of advantage to experiment with tar as a root canal filling. Tar is not only a resinous product, but it likewise contains paraffin. Also it yields valuable disinfecting compounds, such as carbolic acid, and cresol. Moveover, it is a reliable preservative agent. Again——"

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"NO! NO! NOT AGAIN, nor yet ever," cried the Sleepiest Man; "Somebody pay the check and let us go home. You have all been talking about filling roots as though a root canal could be made about the size of a gas pipe. When I get them that size, I can fill them myself, not only to the end, but often a long way beyond the end. And I can fill them with anything from soft soap to silver wire. But when you meet those nice long fine canals, so fine that it takes about an hour's work to get the finest broach approximately near the apex and only about a tenth of a second to withdraw one half of the broach and leave the other half permanently lodged about a millimeter this side of the foramen, that is the time when I feel like calling in one of you canal experts to teach me how to fill roots. And some night I am going to ask somebody exactly that question, but not to-night. It is too late. Here, Waiter, give me that check. I want to be popular the next time we gather Around the Table because I am going to be fussy and ask questions. Ta! Ta! Boys!"



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Regulation of Teeth by Absent Treatment.

To the Editor of ITEMS OF INTEREST.

DEAR SIR: You should be congratulated upon your editorial, "The Regulation of Teeth by Absent Treatment," in October ITEMS OF INTEREST. The custom of a dental laboratory or supply house selecting orthodontia appliances for a dentist and telling him how to treat a case, is wrong, and should be prohibited by the statutes of the different States, or made impossible through the intellectual and moral advancement of the dental profession. The editor truly points out, "No man, dentist or orthodontist, competent to treat a case, would forward casts to a supply house, permit said supply house to decide upon the style of appliance to be used and then proceed to adjust the appliance and to treat the case under directions furnished with the apparatus," and I might add, no intelligent, conscientious dentist, lacking knowledge and experience in orthodontia, would forward models to a dental laboratory for design and manufacture of the appliances, and then attempt to treat the case, expecting to benefit the patient so that he could conscientiously claim a fee for his services.

In the catalogue from which you quote, Illustration No. 2 bears the legend: "This shows the regulating appliance fitted to the model. It is complete in every detail, guaranteed to accomplish results. All you have to do is to place it in the patient's mouth." One might as well place a rifle in the hands of a blind man telling him that it is "guaranteed to accomplish results"; all you have to do is to pull the trigger. Illustration No. 3 is labeled: "This shows the complete retaining appliance fitted to the model after the treatment for irregularity has been completed." The lingual wire shown in place on this model might retain the expansion, but the spurs from central incisor bands hooked over the lingual wire, as shown in illustration, certainly would not prevent those teeth from returning to their former positions of torso-occlusion. This is clearly a case of "The blind leading the blind."

When models of cases of malocclusion have been brought to your correspondent with a request that he tell the dentist what appliance to use, and how to use it, he has often thought of a remark made by a great teacher of orthodontia, who also is interested in the manufacture

of regulating appliances. When asked by some of his students how much to charge for orthodontia cases, he said: "I feel like telling you as I tell dentists who bring models to me and ask how to treat the case and then how much they should charge. I tell them, 'You should not receive a fee from the patient for attempting the treatment, but you should pay the patient for the privilege of gaining the experience.'"

A dental laboratory proprietor recently brought to the writer a model of upper teeth. These teeth had evidently been treated by appliances and from instructions furnished by a laboratory or supply house. There was no model of the lower teeth, neither were there models nor one word of description to show the original state of malocclusion. Bands had been made for the upper central incisors and first bicuspids. The impression was taken over these bands and they were in place upon the model. A lateral incisor and cuspid were in torso-occlusion. The dentist wished the laboratory to design the retainer. When the laboratory proprietor asked what the dentist meant and how to design the retainer, the writer could only reply that he always found it necessary to carefully study the models of a case, both upper and lower, made *before* treatment, while making a retainer.

The practice of a dentist sending models to a dental laboratory or supply house for the manufacture or selection of regulating appliances, is tantamount to a general practitioner of medicine, who, desiring to perform a difficult operation unfamiliar to him, sends to an instrument manufacturer for a set of instruments "guaranteed to accomplish results" and accompanied by "specific instructions" for the performance of the operation. Would any of the readers of ITEMS OF INTEREST, if needing their vermiform appendix removed, care to have the operation performed by a general practitioner whose knowledge of the subject is confined to the meager lectures and clinics which he attended while a student, but who upon the purchase of a set of instruments accompanied by "full and complete instructions" essays to do the operation? Is the dentist who attempts to treat a case of malocclusion of the teeth from instructions furnished by a dental laboratory, any less guilty? No, he is committing a crime, and it should be impossible for the practitioner whose love of money is stronger than his sense of duty to his patient, to be misled by the dental laboratory with appliances for sale.

A conscientious professional man's moral and ethical evolution progresses through observation and study, thus acquiring knowledge until a point is reached where he will not attempt operations which he is not prepared to perform well. As editor of the ITEMS OF INTEREST you are helping to "speed the day."

Fraternally,

A. H. KETCHAM.

Denver, Colo., December, 1913.



Copyright

National Society Meetings.

NATIONAL DENTAL ASSOCIATION, Rochester, N. Y., July 7, 8, 9, 10, 1914.
AMERICAN SOCIETY OF ORTHODONTISTS, Toronto, Can., July 2, 3, 4, 1914.
PANAMA-PACIFIC DENTAL CONGRESS, San Francisco, Calif., 1915.
CANADIAN DENTAL ASSOCIATION, Winnipeg, Manitoba, May 26, 27, 28, 29, 1914.

State Society Meetings.

ARKANSAS STATE DENTAL SOCIETY, Little Rock, Ark.
Secretary, Dr. C. L. Hunt, Fort Smith, Ark.

CALIFORNIA STATE DENTAL ASSOCIATION AND SOUTHERN CALIFORNIA DENTAL ASSOCIATION, Yosemite Valley, Cal., June 29-30, July 1-2, 1914.
Secretary, Dr. E. E. Evans, Union Savings Bank Bldg., Oakland, Cal.

COLORADO STATE DENTAL SOCIETY, Manitou, Colo., June 18-20, 1914.
Secretary, Dr. E. W. Spencer, 120 Pope Block, Peblo, Colo.

CONNECTICUT STATE DENTAL ASSOCIATION, Hartford, Conn., April 21-23, 1914.
Secretary, Dr. Arthur V. Prentis, New London, Conn.

FLORIDA STATE DENTAL SOCIETY.
Secretary, Dr. Alice P. Butler, Gainesville, Fla.

GEORGIA STATE DENTAL SOCIETY, Atlanta, Ga., June 4-6, 1914.
Secretary, Dr. M. M. Forbes, Candler Bldg., Atlanta, Ga.

ILLINOIS STATE DENTAL SOCIETY, Chicago, Ill., March 23-26, 1914.
Secretary, Dr. Henry L. Whipple, Quincy, Ill.

INDIANA STATE DENTAL ASSOCIATION, Indianapolis, Ind., May 19-21, 1914.
Secretary, Dr. Otto U. King, Huntington, Ind.

KENTUCKY STATE DENTAL ASSOCIATION, Louisville, Ky., March 9-12, 1914.
Secretary, Dr. Chas. R. Shacklette, Atherton Bldg., Louisville, Ky.

MAINE DENTAL SOCIETY, Augusta, Me., June 25-27, 1914.
Secretary, Dr. I. E. Pendleton, Lewiston, Me.

MARYLAND STATE DENTAL SOCIETY.
Secretary, Dr. F. W. Drew, 701 N. Howard St., Baltimore, Md.

MASSACHUSETTS DENTAL SOCIETY, Boston, Mass., May 7-9, 1914.
Secretary, Dr. A. H. St. C. Chase, Everett, Mass.

MICHIGAN STATE DENTAL SOCIETY, Detroit, Mich., April 9-11, 1914.
Secretary, Dr. F. Ward Howlett, Jackson, Mich.

MINNESOTA STATE DENTAL ASSOCIATION, Duluth, Minn., August 6-8, 1914.
Secretary, Dr. Benjamin Sandy, Syndicate Bldg., Minneapolis, Minn.

MISSOURI STATE DENTAL ASSOCIATION, St. Louis, Mo., April 21-22, 1914.
Secretary, Dr. S. C. A. Rubey, Warrensburg, Mo.

MISSISSIPPI DENTAL ASSOCIATION, Vicksburg, Miss., June 23-25, 1914.
Secretary, Dr. M. B. Varnado, Osyka, Miss.

MONTANA STATE DENTAL SOCIETY, Great Falls, Montana, June, 1914.
Secretary, Dr. F. W. Adams, 14-15 Chicago Block, Billings, Montana.

NEBRASKA STATE DENTAL SOCIETY, Lincoln, Neb., May 19-21, 1914.
Secretary, Dr. H. J. Porter, Cambridge, Neb.

NEW HAMPSHIRE STATE DENTAL SOCIETY, Weirs, N. H., June 17-19, 1914.
Secretary, Dr. Louis I. Moulton, Concord, N. H.

NEW JERSEY STATE DENTAL SOCIETY, Ocean Grove, N. J., July 15-18, 1914.
Secretary, Dr. John C. Forsyth, 430 E. State St., Trenton, N. J.

NEW YORK STATE DENTAL SOCIETY, Albany, N. Y., May 14-16, 1914.
Secretary, Dr. A. P. Burkhart, 52 Genesee St., Auburn, N. Y.

NORTH CAROLINA DENTAL SOCIETY, Hendersonville, N. C., June 24-27, 1914.
Secretary, Dr. J. Martin Fleming, Raleigh, N. C.

OHIO STATE DENTAL SOCIETY, Columbus, O., December 1-3, 1914.
Secretary, Dr. F. R. Chapman, 305 Schultz Bldg., Columbus, O.

PENNSYLVANIA STATE DENTAL SOCIETY, Phila., Pa., June 30, July 1-2, 1914.
Secretary, Dr. Luther M. Weaver, Phila., Pa.

TENNESSEE STATE DENTAL ASSOCIATION, Chattanooga, Tenn., June 4-6, 1914.
Secretary, Dr. C. O. Rhea, 625½ Church St., Nashville, Tenn.

TEXAS STATE DENTAL ASSOCIATION, Fort Worth, Texas, April 13-17, 1914.
Secretary, Dr. J. G. Fife, Dallas, Texas.
UTAH STATE DENTAL SOCIETY; Logan, Utah, June 19-20, 1914.
Secretary, Dr. I. P. Stewart, 1st Nat. Bank Bldg., Logan, Utah.
VERMONT STATE DENTAL SOCIETY, Rutland, Vt., May 21-23, 1914.
Secretary, Dr. P. M. Williams, Rutland, Vt.
WEST VIRGINIA STATE DENTAL SOCIETY, Huntington, W. Va., August 12-14, 1914.
Secretary, Dr. A. C. Plant, 802 Schmulbach Bldg., Wheeling, W. Va.
WISCONSIN STATE DENTAL SOCIETY, Fond-du-Lac, Wis., July 14-16, 1914.
Secretary, Dr. O. G. Krause, Wells Bldg., Milwaukee, Wis.

The Sixth International Dental Congress, London, England, August 3-8, 1914.

The Sixth International Dental Congress will be held in London, England, August 3-8, 1914. The committee appointed by the National Dental Association having in charge the affairs of the congress relating to the U. S. A. have selected the following to take part in the congress program:

ADDRESSES

Dr. H. J. Burkhart, Batavia, New York, to deliver the address on behalf of the National Dental Association at the opening session.

Dr. Edward C. Kirk, Philadelphia, Pa. Address before the general session, the afternoon session of the opening day; subject, "The Tendencies in Dental Education."

REPORTERS

SECTION 1—DENTAL ANATOMY, HISTOLOGY AND PHYSIOLOGY

"The Evolution of the Human Dentition,"
Dr. I. N. Broomell, Philadelphia, Pa.
"Calcification".....Dr. A. R. Starr, New York City, N. Y.
"Chemistry and Physiology of Saliva,"
Dr. Edward C. Kirk, Philadelphia, Pa.

SECTION 2—DENTAL PATHOLOGY AND BACTERIOLOGY

"The Etiology of Dental Caries"....Dr. B. Holly Smith, Baltimore, Md.
"The Etiology and Pathology of Pyorrhea Alveolaris,"
Dr. Percy R. Howe, Boston, Mass.

"Pathological Conditions of the Dental Pulp,"
Dr. R. W. Bunting, Ann Arbor, Mich

"The Pathology of the Antrum"...Dr. Chas. H. Oakman, Detroit, Mich.

SECTION 3—DENTAL SURGERY AND THERAPEUTICS

"Inflammatory Diseases of the Gingival Margin and Periodontal Membrane, Pyorrhea Alveolaris"...Dr. T. Sidney Smith, Palo Alto, Cal.

"Restorations of Lost Portions of Tooth Substance by Inlaying,"
Dr. R. Ottolengui, New York City, N. Y.

"Oral Sepsis in Relation to General Disease,"
Dr. C. N. Johnson, Chicago, Ill.

"The Prevention of Oral Sepsis by Treatment,"
Dr. J. D. Patterson, Kansas City, Mo.

SECTION 4—DENTAL PHYSICS, RADIOGRAPHY AND METALLURGY

"The Uses and Advantages of X-Rays as an Aid to Diagnosis, including the Differentiation of the Radiographic Appearances of Normal and Abnormal Tissue".....Dr. Howard R. Raper, Indianapolis, Ind.

"The Structural and Other Changes Arising in Connection with Metals Used in the Mouth".....Dr. Clarence J. Grieves, Baltimore, Md.

"The Theory and Practice of Pressure Casting,"
Dr. Weston A. Price, Cleveland, Ohio.

SECTION 5—DENTAL PROSTHESIS

"Articulation and Articulators".....Dr. J. H. Prothero, Chicago, Ill.

"Design and Retention of Partial Dentures,"
Dr. H. J. Goslee, Chicago, Ill.

SECTION 7—ORAL SURGERY AND SURGICAL PROSTHESIS

"The Late Results of Cleft Palate Operations,"
Dr. Truman W. Brophy, Chicago, Ill.

"The Treatment of Dental and Dentigerous Cysts,"
Dr. Wm. Carr, New York City, N. Y.

"Surgical Prosthesis of the Jaws".....Dr. M. C. Smith, Lynn, Mass.

SECTION 8—ANESTHESIA. GENERAL AND LOCAL

"Gas and Oxygen, Alone, in Mixture and in Sequence for the Extraction Operation".....Dr. Chas. K. Teter, Cleveland, Ohio.

"Gas and Oxygen Analgesia for Conservative Operations,"
Dr. Thos. B. Hartzell, Minneapolis, Minn.

"Local Anesthesia with Special References to (*a*) Methods, (*b*) Drugs, (*c*) Sphere of Usefulness, (*d*) Contra-indications and Dangers,"
Dr. Eugene R. Warner, Denver, Colo.

SECTION 9—ORAL HYGIENE, PUBLIC INSTRUCTION AND PUBLIC DENTAL SERVICE

"The Effects of Dental Treatment on National Health and Physique," Dr. Herbert L. Wheeler, New York City.

"Prophylaxis at Different Ages"...Dr. A. R. Melendy, Knoxville, Tenn

"Lantern Demonstration of Slides Showing (*a*) Means of Affording Public Instruction in Dental Hygiene, *e. g.*, Lecture Material, Charts, etc., (*b*) Photographs of School Dental Clinics, Institution for Public Dental Service for Adults or other Institutions in which Public Dental Treatment is Being Carried Qut," Dr. Wm. A. White, Phelps, New York.

SECTION 10—DENTAL EDUCATION

"Methods of Teaching Orthodontics to Dental Students," Dr. S. H. Guilford, Philadelphia, Pa.

The following have been selected as Honorary Presidents of the Sections:

Section I. Dental Anatomy, Histology and Physiology, Dr. Mathew H. Cryer, Philadelphia, Pa.

Section II. Dental Pathology and Bacteriology, . Dr. Thos. B. Hartzell, Minneapolis, Minn.

Section III. Dental Surgery and Therapeutics, Dr. Edward S. Gaylord, New Haven, Conn.

Section IV. Dental Physics, Radiography and Metallurgy, Dr. J. P. Buckley, Chicago, Ill.

Section V. Dental Prosthesis.....Dr. D. O. M. LeCron, London, Eng.

Section VI. Orthodontics.....Dr. Roscoe A. Day, San Francisco, Cal.

Section VII. Oral Surgery and Surgical Prosthesis, Dr. J. D. Patterson, Kansas City, Mo.

Section VIII. Anesthesia—General and Local, Dr. Thos. P. Hinman, Atlanta, Ga.

Section IX. Oral Hygiene, Public Instruction and Public Dental Services.....Dr. Herbert L. Wheeler, New York City.

Section X. Dental Education..Dr. Henry W. Morgan, Nashville, Tenn.

A list of the essayists and clinicians will be published later.

The committee invite the ethical members of the profession of the U. S. A. to become members of the congress. Membership, which includes admission to the congress sessions and a copy of the proceedings is $7.50 and for members of their families accompanying them $3.75.

Dr. Herbert L. Wheeler, 560 Fifth Avenue, New York City, has been appointed by the committee to arrange for steamship rates, sailing dates, itinerary, etc. Those desiring to attend the congress, sailing with

the American delegation, immediately following the meeting of the National Dental Association, Rochester, N. Y., July 10, 1914, are requested to correspond with Dr. Wheeler.

BURTON LEE THORPE, Secretary,
3605 Lindell Blvd.,
St. Louis, Mo.

TRUMAN W. BROPHY, Chairman,
WM. CARR,
S. H. GUILFORD,
WALDO E. BOARDMAN,
Committee.

Sixth International Dental Congress at London, August 3-8, 1914

The Committee on Transportation of the National Dental Association have completed arrangements with the International Mercantile Marine Company, comprising the American, Atlantic Transport, Leyland, Red Star, White Star and White Star-Dominion Lines, whose fleet includes such large, splendid and steady steamers as the *Olympic, Oceanic, Adriatic, Baltic, Cedric, Celtic, Lapland, Minnewaska, Minnehaha, Minnetonka, Minneapolis, Laurentic and Megantic,* sailing to and from numerous prominent ports in England and the Continent and application for sailings and rates should be sent in at once.

Special Rates.

Our delegates to the congress will be allowed a reduction of twenty-five per cent. from tariff rates on all steamers of the I. M. M. Co. Lines sailing on and after July 9th from America and to August 20th from Great Britain and Europe with the single exception of the *Olympic* August 19th from Southampton and Cherbourg for New York.

Please note that when the concession referred to would bring the price for passage below the minimum rate of the steamer selected, the lowest rate of that steamer will be charged as follows:

Olympic, $130 to or from Plymouth, Cherbourg and Southampton.
Oceanic, $110 to or from Plymouth, Cherbourg and Southampton.
Adriatic, $110 to or from Queenstown and Liverpool.
Baltic, Cedric and *Celtic,* $100 from Queenstown and Liverpool.
Lapland, $97.50 to or from Dover and Antwerp.
Other Red Star Line steamers, $85 to or from Dover and Antwerp.
Majestic, $95 to or from Plymouth, Cherbourg and Southampton.
Atlantic Transport Line, $85 to or from London.
Laurentic and *Megantic,* $92.50 between Montreal, Quebec and Liverpool.

Reservations. It is important in order to obtain good accommodation that delegates to the congress should communicate at once regarding reservations, with the International Mercantile Marine Co., 9 Broadway, New York City, stating the dates of their proposed outward and return sailings, also their requirements as to accommodations. Applications will be filled in the order of their receipt. A deposit of twenty-five per cent. of the eastbound passage money is required when the reservation is made, the balance for the round trip being payable at least three weeks prior to the outward sailing.

The committee will also reserve dining saloon seats, steamer chairs and rugs, the deck chairs and rugs renting at $1 each for the voyage. Seats can also be reserved on the trains to London, for which the rates, first-class, are as follows:

Via Southampton	$2.75
" Plymouth	7.50
" Liverpool	7.00
" Dover	4.75

Travelers' Checks. The committee also calls the attention of delegates to the travelers' checks issued by the International Mercantile Marine Company in denominations of $10, $20, $50, $100 and $500, which will be found the safest and most convenient way of carrying funds, as the checks are accepted by hotels, shops, banks, etc., throughout Great Britain and Europe. These are issued for their face value, plus ½ of 1 per cent. commission, and checks not used will be redeemed at face value. It will be to the advantage of the association for its members to use these checks.

White Star Dates. As the White Star sailings available for the congress, from New York, are on July 9th, 16th and 18th, arrangements have been made with the Holland-American Line for those who wish to sail on Tuesday the 14th, to do so, on their steamer New Amsterdam, on which the following rates have been secured.

They will allow a discount of twenty-five per cent. on the tariff rate, for all rooms on Deck A (except the *Chambres de Luxe*) with the understanding that each room be occupied by three passengers.

On Decks B and C they will place all outside and inside rooms we require, at our disposal, at the minimum rate per berth, provided that each room be occupied by three passengers.

The number of passengers to be carried to be divided in proportion to the available accommodations on Decks A, B and C.

Any communications concerning this boat should be sent to Mr. Nyland, Holland-American Line, 21 State Street, New York City.

HERBERT L. WHEELER, Committee.

560 Fifth Avenue, New York City.

Joint Meeting California State Dental Association and Southern California Dental Association.

The joint meeting of the California State Dental Association and the Southern California Dental Association will be held in the gerat Yosemite Valley of California on June 29-30, July 1-2, 1914.

It is expected that this will be the best and largest meeting held on the Pacific Coast.

Persons who have dental methods or appliances of unusual interest are requested to confer with the undersigned in order that they may be given places on the clinical program.

DR. E. E. EVANS, Secretary,
California State Dental Association.

Union Savings Bank Bldg., Oakland, Cal.

New Jersey State Dental Society.

The forty-fourth annual convention of the New Jersey State Dental Society will be held at the North End Hotel, Ocean Grove, N. J., July 15, 16, 17, 18, 1914.

The hotel is situated on the ocean front, at the foot of Wesley Lake. It is within a few feet of the Asbury Park Casino and within a block of the Asbury Park trolley. The meetings will be held in the hotel, while the entire second floor of the pavilion will be devoted to the clinics and exhibits. This pavilion is over the ocean, with plenty of light and every chance for the cool sea breezes to blow through. A bridge over the board walk connects the hotel and pavilion, so that it makes an ideal arrangement for a convention.

An attractive meeting is being arranged and a cordial invitation to attend is extended to all ethical dentists.

JOHN C. FORSYTH, Secretary.

430 E. State St., Trenton, N. J.

New York State Dental Society.

The forty-sixth annual meeting of the Dental Society of the State of New York will be held at Albany, N. Y., May 14, 15 and 16, 1914. The literary program will be rendered at the new State Educational Building. The clinics will be given at the Hotel Ten Eyck, and the dental exhibits in the hotel rooms, as was arranged for the 1913 meeting, which proved very satisfactory to the exhibitors.

An exceptionally attractive meeting is being arranged. A cordial invitation is extended to all ethical dentists in New York and sister States.

Exhibitors please address Dr. O. J. Gross, 404 Union St., Schenectady, N. Y., for space.

There will be the usual reduction of R. R. rates on the certificate plan.

A preliminary notice will be issued during the month of March, 1914, and the following month the completed program.

The Executive Council will meet at the Hotel Ten Eyck on Wednesday, May 13th, at 3 P.M.

For further information address,

A. P. BURKHART, Secretary.

52 Genesee St., Auburn, N. Y.

Canadian Dental Association.

The Canadian Dental Association meets for the first time in Winnipeg, Manitoba, May 26 to 29, inclusive, 1914, and a convention of unusual interest and profit is expected.

M. H. GARVIN, Secretary.

314 Somerset Block,
Winnipeg, Manitoba, Canada.

Texas State Dental Association.

The thirty-fourth annual meeting of the Texas State Dental Association will be held at Fort Worth, Texas, April 13, 14, 15, 16 and 17, 1914.

In addition to the regular program, the Oklahoma Post-Graduate plan will be tried at this meeting.

Dr. Geo. H. Wilson, of Cleveland, will present Prosthetics with special reference to anatomical occlusion, and Dr. Frank H. Skinner, of Chicago, Pyorrhea, Prophylaxis and Removable Bridgework, in connection with same.

For information relative to space for exhibits, or as to clinics, address Dr. W. H. Nugent, Fort Worth, Texas. Any other information will be cheerfully furnished by the secretary.

J. G. FIFE, Secretary-Treasurer, Dallas, Tex.

FRANK FORMAN, President, Waco., Tex.

Washington State Dental Board.

The Washington State Dental Board convenes next May at Seattle for examinations.

PASCAL W. YEARSLEY, D.D.S., President,
208 Paulsen Building, Spokane, Wash.

R. L. MOAK, D.D.S., Secretary-Treasurer,
Montesano, Wash.

Arizona State Dental Society.

At the fifth annual session of the Arizona State Dental Society, held in Phœnix, November 5-7, 1913, the following officers were elected:

President, W. A. Baker, Tucson; Vice-President, J. L. O'Connell, Phœnix; Secretary-Treasurer, H. H. Wilson, Phœnix.

Massachusetts Board of Registration in Dentistry.

A meeting of the Massachusetts Board of Registry in Dentistry will be held in Boston, March 4-5-6, 1914. For applications and further information apply to the Secretary, Dr. G. E. Mitchell, No. 14 Water St., Haverhill, Mass.

Florida State Dental Society.

At the thirteenth annual meeting of the Florida State Dental Society, Atlantic Beach, the officers elected for the ensuing year were as follows: J. W. Darsey, president, Palatka; W. E. Van Brunt, second vice-president, Tallahassee; A. M. Jackson, recording secretary, Lakeland; Alice P. Butler, corresponding secretary, Gainesville; C. L. Nance, treasurer, Tampa.

ALICE P. BUTLER, Corresponding Secretary.